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A

HISTORY

OF THE

EARTH,

AND

ANIMATED NATURE.

IN FOUR VOLUMES.

BY OLIVER GOLDSMITH.

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T. Dixon.

1. ARABIAN HORSE. 2. ZEBRA. 3. ASS.

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A

HISTORY OF ANIMALS.

BOOK I.

ANIMALS OF THE HORSE KIND.

CHAP. I.

OF THE HORSE.*

ANIMALS of the horse kind deserve a place next to man, in a history of nature. Their activity, their strength, their usefulness, and their beauty, all contribute to render them the principal objects of our curiosity and care; a race of creatures in whose welfare we are interested next to our own.

* As it may happen, that in a description where it is the aim rather to insert what is not usually known, than all that is known, some of the more obvious particulars may be omitted; I will take leave to subjoin in the notes the characteristic marks of each animal, as given us by Linnæus. "The horse, with six cutting teeth before, and single-hoofed;* a native of Europe and the East (but I believe rather of Africa); a generous, proud, and strong animal; fit either for the draught, the course, or the road: he is delighted with woods; he takes care of his hinder parts; defends himself from the flies with his tail; scratches his fellow; defends his young; calls by neighing; sleeps after night-fall; fights by kicking, and by biting also; rolls on the ground when he sweats; eats the grass closer than the ox; distributes the seed by dunging; wants a gall-bladder; never vomits; the foal is produced with the feet stretched out; he is injured by being struck on the ear; upon the stifle; by being caught by the nose in barnacles; by having his teeth rubbed with tallow; by the herb padus; by the herb phalandria; by the cruculio; by the conops. His diseases are different in different countries. A consumption of the ethmoid bones of the nose, called the *glanders*, is with us the most infectious and fatal. He eats hemlock without injury. The mare goes with foal 290 days. The placenta is not fixed. He acquires not the canine teeth till the age of five years.

[* In South America is found a horse whose hoofs are divided, like those of a ruminant quadruped. In its general appearance, size, and colour, it resembles the ass, but has the voice and ears of a horse, and has no bands crossing the shoulders. It is very wild, swift, and strong.]

Of all the quadruped animals, the horse seems the most beautiful: the noble largeness of his form, the glossy smoothness of his skin, the graceful ease of his motions, and the exact symmetry of his shape, have taught us to regard him as the first, and as the most perfectly formed; and yet, what is extraordinary enough, if we examine him internally, his structure will be found the most different from that of man of all other quadrupeds whatsoever As the ape approaches us the nearest in internal conformation, so the horse is the most remote;* a striking proof that there may be oppositions of beauty, and that all grace is not to be referred to one standard.

To have an idea of this noble animal in his native simplicity, we are not to look for him in the pastures or the stables, to which he has been consigned by man; but in those wild and extensive plains where he has been originally produced; where he ranges without control, and riots in all the variety of luxurious nature. In this state of happy independence, he disdains the assistance of man, which only tends to servitude. In those boundless tracts, whether of Africa or New Spain, where he runs at liberty, he seems no way incommoded with the inconveniences to which he is subject in Europe. The continual verdure of the fields supplies his wants; and the climate, that never knows a winter, suits his constitution, which naturally seems adapted to heat. His enemies of the forest are but few, for none but the greater kinds will venture to attack him: any one of these he is singly able to overcome; while, at the same time, he is content to find safety in society; for the wild horses of those countries always herd together.

In these countries, therefore, the horses are often seen feeding in droves of five or six hundred. As they do not carry on war against any other race of animals, they are satisfied to remain entirely upon the defensive. The pastures on which they live, satisfy all their appetites, and all other precautions are purely for their security, in case of a surprise. As they are never attacked but at a disadvantage, whenever they sleep in the forests, they have always one among their number that stands as centinel, to give

* Histoire Naturelle, Daubenton. vol. vii. p. 374

notice of any approaching danger; and this office they take by turns.* If a man approaches them while they are feeding by day, their centinel walks up boldly near him, as if to examine his strength, or to intimidate him from proceeding; but as the man approaches within pistol-shot, the centinel then thinks it high time to alarm his fellows; this he does by a loud kind of snorting, upon which they all take the signal, and fly off with the speed of the wind; their faithful centinel bringing up the rear.†

It is not easy to say from what country the horse came originally. It should seem that the colder climates do not agree with his constitution; for although he is found almost in them all, yet his form is altered there, and he is found at once diminutive and ill-shaped. We have the testimony of the ancients that there were wild horses once in Europe; at present, however, they are totally brought under subjection; and even those which are found in America are of a Spanish breed, which being sent thither upon its first discovery, have since become wild, and have spread over all the south of that vast continent almost to the straits of Magellan. These, in general, are a small breed, of about fourteen hands high. They have thick jaws and clumsy joints; their ears and neck also are long; they are easily tamed; for the horse, by nature, is a gentle complying creature, and resists rather from fear than obstinacy. They are caught by a kind of noose, and then held fast by the legs, and tied to a tree, where they are left for two days without food or drink. By that time they begin to grow manageable; and in some weeks they become as tame as if they had never been in a state of wildness. If, by any accident, they are once more set at liberty, they never become wild again, but know their masters, and come to their call. Some of the buccaneers have often been agreeably surprised, after a long absence, to see their faithful horses once more present themselves, with their usual assiduity; and come up, with fond submission, to receive the rein.

These American horses, however, cannot properly be ranked among the wild races, since they were originally

* Dictionnaire Universelle des Animaux, p. 19.
† Labat, tom. vii.

bred from such as were tame. It is not in the new, but the old world, that we are to look for this animal, in a true state of nature; in the extensive deserts of Africa, in Arabia, and those wide-spread countries that separate Tartary from the more southern nations. Vast droves of these animals are seen wild among the Tartars; they are of a small breed, extremely swift, and very readily evade their pursuers. As they go together, they will not admit of any strange animals among them, though even of their own kind. Whenever they find a tame horse attempting to associate with them, they instantly gather round him, and soon oblige him to seek safety by flight. There are vast numbers also of wild horses to the north of China, but they are of a weak, timid breed; small of stature, and useless in war.

At the Cape of Good Hope there are numbers of horses in a state of nature, but small, vicious, and untameable. They are found wild also in several other parts of Africa; but the wretched inhabitants of that country either want the art to tame them, or seem ignorant of their uses. It is common with the negroes, who are carried over from thence to America, when they first see a horse, to testify both terror and surprise. These poor men seem not to have any knowledge of such a creature; and, though the horse is probably a native of their own country, they have let all the rest of mankind enjoy the benefit of his services, without turning them to any advantage at home. In some parts of Africa, therefore, where the horse runs wild, the natives seem to consider him rather in the light of a dainty for food, than a useful creature, capable of assisting them either in war or in labour: riding seems a refinement that the natives of Angola or Caffraria have not as yet been able to attend to; and whenever they catch a horse, it is only with an intent to eat him.

But of all countries in the world, where the horse runs wild, Arabia produces the most beautiful breed, the most generous, swift, and persevering. There are found, though not in great numbers, in the deserts of that country; and the natives use every stratagem to take them. Although they are active and beautiful, yet they are not so large as those that are bred up tame; they are of a brown colour, their mane and tail very short, and the hair black and

tufted.* Their swiftness is incredible; the attempt to pursue them in the usual manner of the chase, with dogs, would be entirely fruitless. Such is the rapidity of their flight, that they are instantly out of view, and the dogs themselves give up the vain pursuit. The only method, therefore, of taking them, is by traps hidden in the sand, which entangling their feet, the hunter at length comes up, and either kills them, or carries them home alive. If the horse be young, he is considered among the Arabians as a very great delicacy; and they feast upon him while any part is found remaining: but if, from his shape or vigour, he promises to be serviceable in his more noble capacity, they take the usual methods of taming him, by fatigue and hunger, and he soon becomes a useful domestic animal.

The usual manner of trying their swiftness is by hunting the ostrich; the horse is the only animal whose speed is comparable to that of this creature, which is found in the sandy plains, with which those countries abound. The instant the ostrich perceives itself aimed at, it makes to the mountains, while the horsemen pursues with all the swiftness possible, and endeavours to cut off its retreat. The chase then continues along the plain, while the ostrich makes use of both legs and wings to assist its motion. However, a horse of the first speed is able to outrun it; so that the poor animal is then obliged to have recourse to art to elude the hunter, by frequently turning: at length, finding all escape hopeless, it hides its head wherever it can, and suffers itself tamely to be taken. If the horse, in a trial of this kind, shews great speed, and is not readily tired, his price becomes proportionably great, and there are some horses valued at a thousand ducats.

But the horses thus caught, or trained in this manner, are at present but very few: the value of Arabian horses, all over the world, has, in a great measure, thinned the deserts of the wild breed; and there are very few to be found in those countries, except such as are tame. The Arabians, as we are told by historians, first began the management of horses in the time of Shaque Ishmael,

* Marm Descript de l'Afrique, lib. i. p. 51.

Before that, they wandered wild along the face of the country neglected and useless; but the natives then first began to tame their fierceness, and to improve their beauty; so that at present they possess a race of the most beautiful horses in the world, with which they drive a trade, and furnish the stables of princes at immense prices.

There is scarcely an Arabian, how poor soever, but is provided with his horse.* They, in general, make use of mares in their ordinary excursions; experience having taught them that they support fatigue, thirst, and hunger, better than the horses are found to do. They are also less vicious, of a gentler nature, and are not so apt to neigh. They are more harmless also among themselves, not so apt to kick or hurt each other, but remain whole days together without the least mischief. The Turks, on the contrary, are not fond of mares; and the Arabians sell them such horses as they do not choose to keep for stallions at home. They preserve the pedigree of their horses with great care, and for several ages back. They know their alliances, and all their genealogy; they distinguish the races by different names, and divide them into three classes. The first is that of the nobles, the ancient breed and unadulterated on either side; the second is that of the horses of the ancient race, but adulterated; and the third is that of the common and inferior kind: the last they sell at a low price; but those of the first class, and even of the second, amongst which are found horses of equal value to the former, are sold extremely dear. They know, by long experience, the race of a horse by his appearance; they can tell the name, the surname, the colour, and the marks properly belonging to each. When they are not possessed of stallions of the noble race themselves, for their mares, they borrow from their neighbours, paying a proper price, as with us, and receive a written attestation of the whole. In this attestation is contained the name of the horse and the mare, and their respective genealogies. When the mare has produced her foal, new witnesses are called, and a new attestation signed, in which are described the marks of the foal, and the day noted when it was brought forth. These attestations

* Buffon.

increase the value of the horse; and they are given to the person who buys him. The most ordinary mare of this race sells for five hundred crowns; there are many that sell for a thousand; and some of the very finest kinds for fourteen or fifteen hundred pounds. As the Arabians have no other house but a tent to live in, this also serves them for a stable; so that the mare, the foal, the husband, the wife, and the children, lie all together indiscriminately: the little children are often seen upon the body or the neck of the mare, while these continue inoffensive and harmless, permitting them thus to play with and caress them without any injury. The Arabians never beat their horses: they treat them gently; they speak to them, and seem to hold a discourse; they use them as friends; they never attempt to increase their speed by the whip, nor spur them, but in cases of necessity. However, when this happens, they set off with amazing swiftness; they leap over obstacles with as much agility as a buck; and if the rider happens to fall, they are so manageable that they stand still in the midst of their most rapid career. The Arabian horses are of a middle size, easy in their motions, and rather inclined to leanness than fat. They are regularly dressed every morning and evening, and with such care that the smallest roughness is not left upon their skins. They wash the legs, the mane, and the tail, which they never cut; and which they seldom comb, lest they should thin the hair. They give them nothing to eat during the day; they only give them to drink once or twice; and at sun-set they hang a bag to their heads, in which there is about half a bushel of clean barley. They continue eating the whole night, and the bag is again taken away the next morning. They are turned out to pasture in the beginning of March, when the grass is pretty high, and at which time the mares are given to the stallion. When the spring is past, they take them again from pasture, and they get neither grass nor hay during the rest of the year; barley is their only food, except now and then a little straw. The mane of the foal is always clipped when about a year or eighteen months old, in order to make it stronger and thicker. They begin to break them at two years old, or two years and a half at farthest; they never saddle or bridle them till at

that age; and then they are always kept ready saddled at the door of the tent, from morning till sun-set, in order to be prepared against any surprise. They at present seem sensible of the great advantage their horses are to the country; there is a law, therefore, that prohibits the exportation of the mares; and such stallions as are brought into England are generally purchased on the eastern shores of Africa, and come round to us by the Cape of Good Hope. They are in general less in stature than our own, being not above fourteen, or fourteen hands and a half high: their motions are much more graceful and swifter than of our own horses; but, nevertheless, their speed is far from being equal; they run higher from the ground; their stroke is not so long and close; and they are far inferior in bottom. Still, however, they must be considered as the first and finest breed in the world, and that from which all others have derived their principal qualifications. It is even probable that Arabia is the original country of horses; since there, instead of crossing the breed, they take every precaution to keep it entire. In other countries they must continually change the races, or their horses would soon degenerate; but there the same blood has passed down through a long succession, without any diminution either of force or beauty.

The race of Arabian horses has spread itself into Barbary, among the Moors, and has even extended across that extensive continent to the western shores of Africa. Among the negroes of Gambia and Senegal, the chiefs of the country are possessed of horses, which, though little, are very beautiful, and extremely manageable. Instead of barley, they are fed in those countries with maise bruised and reduced into meal, and mixed up with milk when they design to fatten them. These are considered as next to the Arabian horses, both for swiftness and beauty; but they are rather still smaller than the former. The Italians have a peculiar sport, in which horses of this breed run against each other. They have no riders, but saddles so formed as to flap against the horses' sides as they move, and thus to spur them forward. They are set to run in a kind of railed walk, about a mile long, out of which they never attempt to escape; but when they once set forward, they never stop, although the walk from one

end to the other is covered with a crowd of spectators, which opens and gives way as the horses approach. Our horses would scarcely, in this manner, face a crowd, and continue their speed without a rider, through the midst of a multitude; and indeed it is a little surprising how in such a place the horses find their own way. However, what our English horses may want in sagacity, they make up by their swiftness; and it has been found upon computation, that their speed is nearly one-fourth greater, even carrying a rider, than that of the swiftest Barb without one.

The Arabian breed has been diffused into Egypt as well as Barbary, and into Persia also; where, as we are told by Marcus Paulus, there are studs of ten thousand white mares all together, very fleet, and with the hoof so hard that shoeing is unnecessary. In these countries, they in general give their horses the same treatment that they give in Arabia, except that they litter them upon a bed of their own dung, dried in the sun, and then reduced to powder. When this, which is spread under the horse about five inches thick, is moistened, they dry it again, and spread it as before. The horses of these countries a good deal resemble each other. They are usually of a slender make; their legs fine, bony, and far apart; a thin mane; a fine crest; a beautiful head; the ear small and well pointed; the shoulder thin; the side rounded, without any unsightly prominence; the croup is a little of the longest, and the tail is generally set high. The race of horses, however, is much degenerated in Numidia; the natives having been discouraged from keeping the breed up by the Turks, who seize upon all the good horses, without paying the owners the smallest gratuity for their care in bringing them up. The Tingitanians and Egyptians have now, therefore, the fame of rearing the finest horses, both for size and beauty. The smallest of these last are usually sixteen hands high; and all of them shaped, as they express it, with the elegance of an antelope.

Next to the Barb, travellers generally rank the Spanish genette. These horses, like the former, are little, but extremely swift and beautiful. The head is something of the largest; the mane thick; the ears long, but well pointed; the eyes filled with fire; the shoulder thickish, and the

breast full and large. The croup round and large; the legs beautiful, and without hair; the pastern a little of the longest, as in the Barb, and the hoof rather too high. Nevertheless, they move with great ease, and carry themselves extremely well. Their most usual colour is black, or a dark bay. They seldom or never have white legs, or white snip. The Spaniards, who have a groundless aversion to these marks, never breed from such as have them. They are all branded on the buttock with the owner's name; and those of the province of Andalusia pass for the best. These are said to possess courage, obedience, grace, and spirit, in a greater degree than even the Barb; and for this reason they have been preferred as war-horses to those of any other country.

The Italian horses were once more beautiful than they are at present, for they have greatly neglected the breed. Nevertheless, there are still found some beautiful horses among them, particularly among the Neapolitans, who chiefly use them for the draught. In general, they have large heads and thick necks. They are also restive, and consequently unmanageable. These faults, however, are recompensed by the largeness of their size, by their spirit, and the beauty of their motion. They are excellent for show, and have a peculiar aptitude to prance.

The Danish horses are of such an excellent size, and so strong a make, that they are preferred to all others for the draught. There are some of them perfectly well shaped; but this is but seldom seen, for in general they are found to have a thick neck, heavy shoulders, long and hollow back, and a narrow croup: however, they all move well, and are found excellent both for parade and war. They are of all colours, and often of whimsical ones, some being streaked like the tiger, or mottled like the leopard.

The German horses are originally from Arabian and Barbary stocks: nevertheless, they appear to be small and ill-shaped: it is said also, that they are weak and washy, with tender hoofs. The Hungarian horses, on the other hand, are excellent for the draught, as well as the saddle. The Hussars, who use them in war, usually slit their nostrils; which is done, as it is said, to prevent their neighing, but, perhaps, without any real foundation.

The Dutch breed is good for the draught, and is generally

used for that purpose over Europe: the best come from the province of Friezland. The Flanders' horses are much inferior to the former; they have most commonly large heads, flat feet, and swollen legs; which are an essential blemish in horses of this kind.

The French horses are of various kinds; but they have few that are good. The best horses of that country come from Limosin; they have a strong resemblance to the Barb, and, like them, they are excellent for the chase; but they are slow in coming to perfection: they are to be carefully treated while young, and must not be backed till they are eight years old. Normandy furnishes the next best; which, though not so good for the chase, are yet better for war. In general, the French horses have the fault of being heavy shouldered, which is opposite to the fault of the Barb, which is too thin in the shoulder, and is consequently apt to be shoulder-slipt.

Having mentioned the horses most usually known in Europe, we pass on to those of more distant countries, of whose horses we can only judge by report. We mentioned the wild horses of America. Such as are tame, if we may credit the latest reports,* are admirable. Great numbers of these are bred up to the chase, and are chiefly kept for this purpose, particularly at Quito. The hunters as Ulloa informs us, are divided into two classes; one part on foot, the other on horseback: the business of the footmen is to rouse the deer; and that of the horsemen, to hunt it down. They all, at break of day, repair to the place appointed, which is generally on the summit of a hill, with every man his greyhound. The horsemen place themselves on the highest peaks; whilst those on foot range the precipices, making an hideous noise, in order to start the deer. Thus the company extend themselves three or four leagues, or more, according to their numbers. On starting any game, the horse which first perceives it, sets off, and the rider, being unable to guide or stop him, pursues the chase, sometimes down such a steep slope, that a man on foot, with the greatest care, could hardly keep his legs; from thence he flies up a dangerous ascent, or along the side of a mountain; so that a person not used to this exercise would think it much safer to

* Ulloa's Voyage, vol. i. p. 464.

throw himself out of the saddle, than commit his life to the precipitate ardour of his horse. The other horses, which join in the chase, do not wait for the riders to animate them; they set forward immediately upon seeing another at full speed; and it becomes prudence in the rider to give them their way, and at the same time to let them feel the spur, to carry him over the precipices. These horses are backed and exercised to this method of hunting; and their usual pace is trotting.

There are said to be very good horses in the islands of the Archipelago. Those of Crete were in great reputation among the ancients for their swiftness and force; however, at present they are but little used, even in the country itself, because of the unevenness of the ground, which is there very rocky and mountainous. The original horses of Morocco are much smaller than the Arabian breed; however, they are very swift and vigorous. In Turkey there are to be found horses of almost all races: Arabians, Tartars, Hungarians, and those natural to the place. The latter are very beautiful and elegant; they have a great deal of fire, swiftness, and management; but they are not able to support fatigue: they eat little; they are easily heated; and they have skins so sensible, that they can scarcely bear the rubbing of the stirrup. The Persian horses are, in general, the most beautiful and most valuable of all the East. The pastures in the plains of Media, Persepolis, Ardebil, and Derbent, are excellent for the purpose of rearing them; and there were bred in those places vast numbers, by order of the government of Persia, while that country was under any government. Pietro della Valle prefers the horses of Persia to those of Italy; and informs us, that they are in general of a middle size; and although some are found even of the smallest stature, yet that does not impair their beauty or their strength; yet, in some places, they are found of a very good size, and as large as the English saddle-horses are generally found to be: they have all a thin head, a fine crest, a narrow breast, small ears well placed, the legs fine, the hoof hard, and the croup beautiful; they are docile, spirited, nimble, hardy, courageous, and capable of supporting very great fatigue; they run very swiftly, without being easily fatigued; they are strong, and easily nourished, being only supplied with barley and chopped straw; they

are put to grass only for six weeks in the spring; they have always the tail at full length, and there is no such thing as geldings among the number; they are defended from the air, as in England, by body-cloths; they attend them with the most punctual exactness; and they are rid generally in a snaffle, without spurs. Great numbers of these are every year transported into Turkey, but chiefly into the East Indies: however, after all, travellers agree that they are not to be compared to the Arabian horses, either for courage, force, or beauty; and that the latter are eagerly sought, even in Persia.

The horses of India are of a very indifferent kind, being weak and washy. Those which are used by the grandees of the country come from Persia and Arabia; they are fed with a small quantity of hay during the day; and at night they have boiled peas, mixed with sugar and butter, instead of oats or barley: this nourishment supports them, and gives them strength; otherwise they would soon sink and degenerate. Those naturally belonging to the country, are very small and vicious. Some are so very little, that Taverner reports, that the young Mogul prince, at the age of seven or eight, rode one of those little horses, that was not much larger than a greyhound: and it is not long since one of these was brought over into this country as a present to our Queen, that measures no more than nine hands high: and is not much larger than a common mastiff. It would seem, that climates excessively hot are unfavourable to this animal. In this manner, the horses of the Gold-coast, and of Guinea, are extremely little, but very manageable. It is a common exercise with the grandees of that country, who are excellent horsemen, to dart out their lances before them upon full gallop, and to catch them again before they come to the ground. They have a sport also on horseback, that requires great dexterity in the rider, and a great share of activity in the horse: they strike off a ball, with a battledore, while they are upon a full gallop, and pursuing it, strike it again before it comes to the ground; and this they continue for a mile together, striking sometimes to the right, and sometimes to the left, with amazing speed and agility.

The horses of China are as indifferent as those of India: they are weak, little, ill-shaped, and cowardly. Those of

Corea are not above three feet high; almost all the breed there are made geldings, and are so timorous, that they can be rendered no way serviceable in war; so that it may be said, that the Tartar horses were properly the conquerors of China. These, indeed, are very serviceable in war, and although but of a middle size, yet they are surprisingly patient, vigorous, swift, and bold; their hoofs are extremely hard, though rather too narrow; their heads are fine, but rather too little; the neck is long and stiff; the legs of the longest; and yet, with all these faults, they are found to be an excellent breed. The Tartars live with their horses pretty much in the same manner as the Arabians do; they begin to back them at the age of seven or eight months, placing their children upon them, who manage them even at that early age. By these means they break them by little and little, till at last, about the age of six or seven years, they are capable of enduring amazing hardships. Thus they have been known to march two or three days without once stopping; to continue five or six, without eating any thing except a handful of grass at every eight hours; and, besides, to remain without drinking for four and twenty hours. These horses, which are so vigorous in their own country, lose all their strength when they are brought into China or the Indies; but they thrive pretty well in Persia and Turkey. The race of little Tartars towards the north have also a breed of little horses, which they set such a value upon, that it is forbidden to sell them to strangers: these horses have the very same qualities with those of the larger kind; which they probably derive from a similar treatment. There are also very fine horses in Circassia and Mingrelia. There are some greatly esteemed in the Ukraine, in Walachia, Poland, and Sweden; but we have no particular accounts of their excellencies or defects.

If we consult the ancients on the nature and qualities of the horses of different countries, we learn that the Grecian horses, and particularly those of Thessaly, had the reputatation of being excellent for war; that those of Achaia were the largest that were known; that the most beautiful came from Egypt, which bred great numbers; that the horses of Ethiopia were not in esteem, from the heat of the country; that Arabia and Africa furnished very beautiful horses, and

very fit for the course; that those of Italy, and particularly of Apulia, were very good; that in Sicily, Capadocia, Syria, Armenia, Media, and Persia, there were excellent horses, equally esteemed for their speed and vigour; that those of Sardinia and Corsica, though small, were spirited and courageous; that those of Spain resembled the Parthian horses, in being very well adapted for war; that in Walachia and Transylvania, there were horses with bushy tails, and manes hanging down to the ground, which, nevertheless, were extremely swift and active; that the Danish horses were good leapers; those of Scandinavia, though little, were well shaped, and possessed of great agility; that the Flanders' breed was strong; that the Gaulish horses were good for carrying burdens; that the German breeds were so bad, so diminutive and ill-shaped, that no use could be made of them; that the Swiss and Hungarian horses were good; and, lastly, that those of India were very diminutive and feeble.

Such are the different accounts we have of the various races of horses in different parts of the world. I have hitherto omitted making mention of one particular breed, more excellent than any that either the ancients or moderns have produced; and that is our own. It is not without great assiduity, and unceasing application, that the English horses are now become superior to those of any other part of the world, for size, strength, swiftness, and beauty. It was not without great attention, and repeated trials of all the best horses in different parts of the world, that we have been thus successful in improving the breed of this animal; so that the English horses are now capable of performing what no others ever could attain to. By a judicious mixture of the several kinds, by the happy difference of our soils, and by our superior skill in management, we have brought this animal to its highest perfection. An English horse, therefore, is now known to excel the Arabian in size and swiftness, to be more durable than the Barb, and more hardy than the Persian. An ordinary racer is known to go at the rate of a mile in two minutes: and we had one instance, in the admirable Childers, of still greater rapidity. He has been frequently known to move above eighty-two feet and a half in a second, or almost a mile in a minute: he has also run round the course of

Newmarket, which is very little less than four miles, in six minutes and forty seconds. But what is surprising, few horses have been since found that ever could equal him: and those of his breed have been remarkably deficient.

However this be, no horses can any way equal our own, either in point of swiftness or strength; and these are the qualifications our horsemen seem chiefly to value. For this reason, when the French, or other foreigners, describe our breed, they all mention, as a fault, the awkward and ungainly motion of our horses; they allow them to be very good indeed, but they will not grant them an easy or an elegant carriage.* But these writers do not consider that this seeming want of grace is entirely the result of our manner of breaking them. We consult only speed and dispatch in this animal's motions: the French and other nations are more anxious for parade and spirit. For this reason, we always throw our horses forward, while they put them upon their haunches: we give them an easy swift gait of going, that covers a great deal of ground, they, on the contrary, throw them back, giving them a more showy appearance indeed, but one infinitely less useful. The fault of our manner of breaking is, that the horse is sometimes apt to fall forward: the French managed-horse never falls before, but more usually on one side: and for this reason the rider wears stiff boots, to guard his legs against such accidents. However, it would be a very easy matter to give our horses all that grace which foreigners are so fond of; but it would certainly take from their swiftness and durability.

But in what degree of contempt soever foreigners might formerly have held our horses, they have for some time perceived their error, and our English hunters are considered as the noblest and the most useful horses in the world. Our geldings are, therefore, sent over to the continent in great numbers, and sell at very great prices; as for our mares and stallions, there is a law prohibiting their exportation; and one similar to this is said to have obtained even as early as the times of Athelstan, who prohibited their exportation, except where designed as presents.

* See Buffon's account of our horses.

Roger de Belegme, created Earl of Shrewsbury by William the Conqueror,* is the first who is recorded to have made attempts towards the mending our native breed. He introduced Spanish stallions into his estate at Powisland in Wales, from which that part of the country was for many ages after famous for a swift and generous race of horses: however, at that time strength and swiftness were more regarded than beauty; the horses' shapes, in time of action, being entirely hid by a coat of armour, which the knights then usually put upon them, either by way of ornament or defence.

The number of our horses in London alone, in the time of king Stephen, is said to have amounted to twenty thousand. However, long after, in the times of queen Elizabeth, the whole kingdom could not supply two thousand horses to form our cavalry. At present, the former numbers seem revived; so that, in the late war, we furnished out above thirteen thousand horsemen; and could, if hard pushed, supply above four times that number. How far this great increase of horses among us may be beneficial, or otherwise, is not the proper business of the present page to discuss; but certain it is, that where horses increase in too great a degree, men must diminish proportionably; as that food which goes to supply the one, might very easily be converted into nourishment to serve the other. But, perhaps, it may be speculating too remotely, to argue for the diminution of their numbers upon this principle, since every manufacture we export into other countries, takes up room, and may have occupied that place, which, in a state of greater simplicity, might have given birth and subsistence to mankind, and have added to population.

Be this as it will, as we have been at such expence and trouble to procure an excellent breed of horses, it is not now to be expected that we should decline the advantages arising from it, just when in our possession. It may be, therefore, the most prudent measure in our legislature, to encourage the breed as an useful branch of commerce, and a natural defence to the country. But how far this end is answered by the breeding up of racers, is what most persons, versed in

* British Zoology, vol. i. p. 4. To this work I am indebted for several particulars with regard to the native animals of this island.

this subject, are very apt to question. They assert, that the running-horse, as the breed has been for a long time refined, is unfit for any other service than that of the course, being too slight either for the road, the chase, or the combat; and his joints so delicately united, as to render him subject to the smallest accidents. They, therefore, conclude, that less encouragement given to racing, would be a means of turning us from breeding rather for swiftness than strength; and that we should thus be again famous for our strong hunters, which, they say, are wearing out from among us.

How far this may be fact, I will not take upon me to determine, being but little versed in a subject that does not properly come within the compass of natural history. Instead, therefore, of farther expatiating on this well-known animal's qualifications, upon which many volumes might easily be written, I will content myself with just mentioning the description of Camerarius, in which he professes to unite all the perfections which a horse ought to be possessed of:—"It must," says he, "have three parts like those of a woman; the breast must be broad, the hips round, and the mane long: it must in three things resemble a lion; its countenance must be fierce, its courage must be great, and its fury irresistible: it must have three things belonging to the sheep; the nose, gentleness, and patience: it must have three of a deer; head, leg, and skin: it must have three of a wolf; throat, neck, and hearing: it must have three of a fox; ear, tail, and trot: three of a serpent; memory, sight, and flexibility: and, lastly, three of a hare; running, walking, and perseverance."*

* It is a curious natural fact, that the horse has the singular property of breathing through the nostril only, and not through the mouth; for, in the severest exercise, the mouth is never seen open, unless the lower jaw be brought down violently by the force of the bit. This may account for the great dilatation of the nostrils after hard running.

In those vast desert regions, in the most southern parts of Siberia, is found a horse differing in several particulars from the common horse, already described. It is said to live in small herds of about twenty each, having the manners of the common wild horse, but far exceeding it in swiftness. Its head is large, and forehead flat; and its teeth are only thirty-eight in number. But the most singular mark of difference is, that the tail is slender, like that of the cow, and destitute of hair for half its length; the lower part only being covered with a long ash-coloured hair.

CHAP. II.

OF THE ASS.*

ALTHOUGH this animal is very easily distinguished from the horse at first sight, yet, upon a closer inspection, the similitude between them is very striking. They have both a similar outline in the external parts; the same conformation within. One would be led, from the great resemblance there is between them, to suppose them of the same species; and that the ass was only a horse degenerated: however, they are perfectly distinct, and there is an inseparable line drawn between them, for the mule they produce is barren. This seems to be the barrier between every species of animals; this keeps them asunder, and preserves the unities of their form. If the mule, or the monster, bred between two animals, whose form nearly approaches, is no longer fertile, we may then conclude, that these animals, however resembling, are of different kinds. Nature has providently stopped the fruitfulness of these ill-formed productions, in order to preserve the form of every animal uncontaminated: were it not for this, the races would quickly be mixed with each other; no one kind would preserve its original perfection; every creature would quickly degenerate; and the world would be stocked with imperfection and deformity.

The horse and the ass, therefore, though so nearly approaching in form, are of two distinct kinds, different in their natures; and were there but one of each kind, both races would then be extinguished. Their shapes and their habits may, indeed, be very nearly alike; but there is something in every animal, besides its conformation or way of life, that determines its specific nature. Thus there is much greater resemblance between the horse and the ass, than between the sheep and the goat; and yet the latter produce an animal that is by no means barren, but which quickly reproduces an offspring resembling the sheep;

* Many parts of this account are extracted from Daubenton and Buffon; which I mention here, to avoid troubling the reader with a multiplicity of quotations.

while the mule of the former is marked with certain sterility. The goat and the sheep may be therefore said to be of one kind, although so much unlike in figure; while the horse and the ass are perfectly distinct, though so closely resembling. It has, indeed, been said by Aristotle, that their male is sometimes prolific; this, however, has not been confirmed by any other testimony, although there has elapsed a period of near two thousand years to collect the evidence.

But what tends to put the subject out of dispute, is, that the two animals are found in a state of nature entirely different. The onager, or wild ass, is seen in still greater abundance than the wild horse; and the peculiarities of its kind are more distinctly marked than in those of the tame one. Had it been a horse degenerated, the likeness would be stronger between them, the higher we went to the original stock from whence both have been supposed to be sprung. The wild animals of both kinds would, in such a case, resemble each other, much more than those of the tame kind, upon whom art has, for a succession of ages, been exercising all its force, and producing strange habits and new alterations. The contrary, however, obtains, and the wild ass is even more assinine, if I may so express it, than that bred in a state of domestic servitude; and has even a natural aversion to the horse, as the reader will shortly learn.

The wild ass has, by some writers, been confounded with the zebra, but very improperly, for they are of a very different species. The wild ass is not streaked like the zebra, nor is his shape so beautiful; his figure is pretty much the same as that of the common ass, except that he is of a brighter colour, and has a white list running from his head to his tail. This animal is found wild in many islands of the Archipelago, particularly in that of Cerigo. There are many wild asses in the deserts of Lybia and Numidia, that run with such amazing swiftness that scarcely even the coursers of the country can overtake them. When they see a man, they set up a horrid braying, and stop short all together, till he approaches near them; they then, as if by common consent, fly off with great speed; and it is upon such occasions that they generally fall into the traps which are previously prepared

to catch them. The natives take them chiefly upon account of their flesh, which they esteem as delicious eating; and for their skins, of which that kind of leather is made which is called *shagreen*.

Olearius relates, that the monarch of Persia invited him on a certain day to be present at an entertainment of a very peculiar nature, which was exhibited in a small building, near the palace, resembling a theatre. After a collation of fruits and sweetmeats, more than thirty of these wild asses were driven into the area, among which the monarch discharged several shot, and some arrows, and in which he was imitated by some of the rest of his attendants. The asses, finding themselves wounded, and no way of escaping, instantly began to attack each other, biting with great fierceness, and braying terribly. In this manner they continued their mutual animosity, while the arrows were poured in from above, until they were all killed: upon which they were ordered to be taken, and sent to the king's kitchen at Ispahan. The Persians esteem the flesh of this animal so highly, that its delicacy is even become a proverb among them. What may be the taste of wild ass's flesh, we are unable to say; but certain it is, that the flesh of the tame ass is the worst that can be obtained, being drier, more tough, and more disagreeable, than horse-flesh. Galen even says that it is very unwholesome. Yet we should not judge hastily upon the different tastes of different people, in the preference they give to certain meats. The climate produces very great changes in the tenderness and the savour of several viands: that beef, for instance, which is so juicy and good in England, is extremely tough and dry when killed under the line; on the contrary, that pork, which is with us so unpalatable in summer, in the warmer latitudes, where it is always hotter than here, is the finest eating they have, and much preferable to any hog's flesh in Europe.

The ass, like the horse, was originally imported into America by the Spaniards, and afterwards by other nations. That country seems to have been peculiarly favourable to this race of animals; and, where they have run wild, they have multiplied in such numbers, that in some places they are become a nuisance. In the kingdom of

Quito, the owners of the grounds where they are bred, suffer all persons to take away as many as they can, on paying a small acknowledgment, in proportion to the number of days their sport lasts. They catch them in the following manner. A number of persons go on horseback, and are attended by Indians on foot: when arrived at the proper places, they form a circle, in order to drive them into some valley; where, at full speed, they throw the noose, and endeavour to halter them. Those creatures, finding themselves enclosed, make very furious efforts to escape; and, if only one forces his way through, they all follow with an irresistible impetuosity. However, when noosed, the hunters throw them down, and secure them with fetters, and thus leave them till the chase is over. Then, in order to bring them away with greater facility, they pair them with tame beasts of the same kind; but this is not easily performed, for they are so remarkably fierce that they often hurt the persons who undertake to manage them. They have all the swiftness of horses, and neither declivities nor precipices can retard their career. When attacked, they defend themselves with their heels and mouth with such activity, that without slackening their pace, they often maim their pursuers. But the most remarkable property in these creatures is, that, after carrying their first load, their celerity leaves them, their dangerous ferocity is lost, and they soon contract the stupid look and dulness peculiar to the assinine species. It is also observable, that these creatures will not permit a horse to live among them. They always feed together; and if a horse happens to stray into the place where they graze, they all fall upon him; and, without giving him the liberty of flying, they bite and kick him till they leave him for dead upon the spot.*

Such is this animal in its natural state, swift, fierce, and formidable: but, in the state of tameness, the ass presents a very different picture; the moment his native liberty is repressed, he seems entirely to give up all claims to freedom; and he assumes a patience and submission even humbler than his situation. He is, in a state of tameness, the most gentle and quiet of all animals. He suffers with

* Ulloa, vol. i. p. 316.

constancy, and, perhaps, with courage, all the ill-treatment that cruelty and caprice are pleased to inflict. He is temperate with regard to the quantity and the quality of his provision. He is contented with the most neglected weeds; and makes his humble repast upon what the horse and other animals leave behind. If he gives the preference to any vegetable, it is to the plantain; for which he is often seen to neglect every other herb in the pasture: but he is chiefly delicate with respect to his water; he drinks only at the clearest brooks, and chiefly those to which he has been accustomed. He drinks as soberly as he eats; and never, like the horse, dips his nose into the stream. As he is seldom saddled, he frequently rolls himself upon the grass; and lies down, for this purpose, as often as he has an opportunity, without minding what becomes of his burden. He never rolls, like the horse, in the mud; he even fears to wet his feet; and turns out of his way to avoid the dirty parts of a road.

When very young, the ass is sprightly, and even tolerably handsome; but he soon loses these qualifications, either by age or bad treatment, and he becomes slow, stupid, and headstrong. He seems to shew no ardour, except for the female, having been often known to die after the covering. The she-ass is not less fond of her young than the male is of her; and we are assured that she will cross fire and water to protect or rejoin it. This animal is sometimes not less attached to his owner; by whom he is too often abused. He scents him at a distance, and distinguishes him from others in a crowd; he knows the ways he has passed, and the places where he inhabits.

When overloaded, the ass shews the injustice of his master, by hanging down his head and lowering his ears; when he is too hard pressed, he opens his mouth and draws back his lips, in a very disagreeable manner. If his eyes are covered he will not stir a step; and, if he is laid down in such a manner, that one eye is covered with the grass while the other is hidden with a stone, or whatever is next at hand, he will continue fixed in the same situation, and he will not so much as attempt to rise to free himself from those slight impediments. He walks, trots, and gallops, like a horse; but, although he sets out

very freely at first, yet he is soon tired; and then no beating will make him mend his pace. It is in vain that his unmerciful rider exerts his whip or his cudgel; the poor little animal bears it all with patience, and without a groan; and, conscious of his own imbecility, does not offer even to move.

Notwithstanding the stupid heaviness of his air, he may be educated with as much ease as any other animal; and several have been brought up to perform, and exhibit as a show. In general, however, the poor animal is entirely neglected. Man despises this humble useful creature, whose efforts are exerted to please him, and whose services are too cheaply purchased. The horse is the only favourite, and upon him alone all expense and labour are bestowed. He is fed, attended, and stabled, while the ass is abandoned to the cruelty of the lowest rustics, or even to the sport of children; and, instead of gaining by the lessons he receives, is always a loser. He is conducted along by blows; he is insulted by unnecessary stripes; he is overloaded by the lazy; and, being generally the property of the poor, he shares with them in their wants and their distresses. Thus this faithful animal, which, were there no horses, would be the first of the quadruped kind in our esteem, is now considered as nothing: his properties and qualifications being found in a higher degree elsewhere, he is entirely disregarded; and, from being the second, he is degraded into one of the most useless of the domestic quadrupeds.

For this reason, very little care has been taken to improve the breed; it is suffered to degenerate; and it is probable, that of all other animals this alone is rendered feebler and more diminutive, by being in a state of domestic servitude. The horse, the cow, and the sheep, are rendered larger by the assiduity of man; the ass is suffered to dwindle every generation, and particularly in England, where it is probable that, but for the medicinal qualities of its milk, the whole species would have ere now been extinguished. Nevertheless, we have good reasons to believe that, were the same care bestowed on the ass that is spent upon the horse, were the same industry used in crossing the breed and improving it, we should see the ass become, from his present mean state, a very portly and serviceable animal; we should find him rival the horse in some of his perfec-

tions, and exceed him in others. The ass, bulk for bulk, is stronger than the horse; is more sure-footed; and though more slow in his motions, he is much less apt to start out of the way.

The Spaniards, of all people in Europe, seem alone to be acquainted with the value of the ass. They take all proper precautions to improve the breed; and I have seen a jack-ass, from that country, above fifteen hands high. This animal, however, seems originally a native of Arabia. A warm climate is known to produce the largest and the best; their size and spirit decline in proportion as they advance into colder regions.

Though now so common in all parts of England, the ass was entirely lost among us during the reign of queen Elizabeth. Holingshead informs us that our land did yield no asses.* However, there are accounts of their being common in England before that time. In Sweden, they are at present a sort of rarity; nor does it appear by the last history of Norway, that they have yet reached that country. It is in the hotter climates alone that we are to look for the original of this serviceable creature. In Guinea, they are larger and more beautiful than even the horses of the same country. In Persia, they have two kinds; one of which is used for burdens, being slow and heavy; the other, which is kept for the saddle, being smooth, stately, and nimble. They are managed as horses, only that the rider sits nearer the crupper, and they are taught to amble like them. They generally cleave their nostrils to give them more room for breathing, and many of these are sold for forty or fifty pounds.

The ass is a much more hardy animal than the horse, and liable to fewer diseases. Of all animals covered with hair, he is the least subject to vermin, for he has no lice, probably owing to the dryness and the hardness of his skin. Like the horse, he is three or four years in coming to perfection; he lives till twenty or twenty-five; sleeps much less than the horse; and never lies down for that purpose, unless very much tired. The she-ass goes above eleven months with young, and never brings forth more than one at a time. The mule may be engendered either

* British Zoology, vol. i. p. 11.

between a horse and a she-ass, or between a jack-ass and a mare. The latter breed is every way preferable, being larger, stronger, and better shaped. It is not yet well known whether the animal called the Gimerro be one of these kinds; or, as is asserted, bred between the ass and the bull. While naturalists affirm the impossibility of this mixture, the natives of the alpine countries, where this animal is bred, as strongly insist upon its reality. The common mule is very healthy, and will live above thirty years, being found very serviceable in carrying burdens, particularly in mountainous and stony places, where horses are not so sure-footed. The size and strength of our asses is at present greatly improved by the importation of Spanish jack-asses; and it is probable we may come in time to equal the Spaniards in breeding them, where it is not uncommon to give fifty or sixty guineas for a mule; and, indeed, in some mountainous countries, the inhabitants cannot well do without them. Their manner of going down the precipices of the Alps, or the Andes, is very extraordinary; and with it we will conclude their history. In these passages, on one side, are steep eminences, and, on the other, frightful abysses; and, as they generally follow the direction of the mountain, the road, instead of lying in a level, forms at every little distance steep declivities, of several hundred yards downward. These can only be descended by mules; and the animal itself seems sensible of the danger, and the caution that is to be used in such descents. When they come to the edge of one of these descents, they stop, without being checked by the rider; and, if he inadvertently attempts to spur them on, they continue immoveable. They seem all this time ruminating on the danger that lies before them, and preparing themselves for the encounter. They not only attentively view the road, but tremble and snort at the danger. Having prepared for the descent, they place their fore-feet in a posture as if they were stopping themselves; they then also put their hinder-feet together, but a little forward, as if they were going to lie down. In this attitude, having taken as it were a survey of the road, they slide down with the swiftness of a meteor. In the mean time, all the rider has to do is to keep himself fast on the saddle, without checking the rein, for the

least motion is sufficient to disorder the equilibrium of the mule; in which case they both unavoidably perish. But their address, in this rapid descent, is truly wonderful; for, in their swiftest motion, when they seem to have lost all government of themselves, they follow exactly the differen windings of the road, as if they had previously settled in their minds the route they were to follow, and taken every precaution for their safety. In this journey, the natives, who are placed along the sides of the mountains, and hold by the roots of the trees, animate the beast with shouts, and encourage him to perseverance. Some mules, after being long used to these journies, acquire a kind of reputation for their safety and skill; and their value rises in proportion to their fame.*

CHAP. III.

OF THE ZEBRA.

THERE are but three animals of the horse-kind. The horse, which is the most stately and courageous; the ass, which is the most patient and humble; and the zebra, which is the most beautiful, but at the same time the wildest animal in nature. Nothing can exceed the delicate regularity of this creature's colour, or the lustrous smoothness of its skin; but, on the other hand, nothing can be more timid or more untameable.

It is chiefly a native of the southern parts of Africa; and there are whole herds of them often seen feeding in those extensive plains that lie towards the Cape of Good Hope. However, their watchfulness is such, that they will suffer nothing to come near them, and their swiftness so great, that they readily leave every pursuer far behind. The Zebra, in shape, rather resembles the mule, than the horse or the ass. It is rather less than the former, and yet larger than the latter. Its ears are not so long as those of the ass, and yet not so small as in the horse-kind. Like

* Ulloa, vol. i.

the ass, its head is large, its back straight, its legs finely placed, and its tail tufted at the end; like the horse, its skin is smooth and close, and its hind quarters round and fleshy. But its greatest beauty lies in the amazing regularity and elegance of its colours. In the male, they are white and brown; in the female, white and black. These colours are disposed in alternate stripes over the whole body, and with suck exactness and symmetry, that one would think Nature had employed the rule and compass to paint them. These stripes, which, like so many ribbands, are laid all over its body, are narrow, parallel, and exactly separated from each other. It is not here as in other party-coloured animals, where the tints are blended into each other; every stripe here is perfectly distinct, and preserves its colour round the body, or the limb, without any diminution. In this manner are the head, the body, the thighs, the legs, and even the tail and the ears, beautifully streaked, so that at a little distance one would be apt to suppose that the animal was dressed out by art, and not thus admirably adorned by nature.

In the male zebra, the head is striped with fine bands of black and white, which in a manner centre in the forehead. The ears are variegated with a white and dusky brown. The neck has broad stripes of the same dark brown running round it, leaving narrow white stripes between. The body is striped also across the back with broad bands, leaving narrower spaces of white between them, and ending in points at the sides of the belly, which is white except a black line pectinated on each side, reaching from between the fore-legs, along the middle of the belly, two-thirds of its length. There is a line of separation between the trunk of the body and the hinder quarters, on each side; behind which, on the rump, is a plat of narrow stripes, joined together by a stripe down the middle, to the end of the tail. The colours are different in the female; and in none the stripes seem entirely to agree in form, but in all they are equally distinct; the hair equally smooth and fine; the white shining and unmixed; and the black, or brown, thick and lustrous.

Such is the beauty of this creature, that it seems by nature fitted to satisfy the pride and the pleasure of man; and formed to be taken into his service. Hitherto,

however, it appears to have disdained servitude, and neither force nor kindness have been able to wean it from its native independence and ferocity. But this wildness might, perhaps, in time be surmounted: and it is probable, the horse and the ass, when first taken from the forest, were equally obstinate, fierce, and unmanageable. Mr. Buffon informs us that the zebra, from which he took his description, could never be entirely mastered, notwithstanding all the efforts which were tried to tame it. They continued, indeed, to mount it, but then with such precautions as evidently shewed its fierceness, for two men were obliged to hold the reins, while the third ventured upon its back; and even then it attempted to kick whenever it perceived any person approaching. That which is now in the Queen's menagerie, at Buckingham-Gate, is even more vicious than the former; and the keeper who shews it, takes care to inform the spectators of its ungovernable nature. Upon my attempting to approach it, it seemed quite terrified, and was preparing to kick, appearing as wild as if just caught, although taken extremely young, and used with the utmost indulgence. Yet still it is most probable that this animal, by time and assiduity, could be brought under subjection. As it resembles the horse in form, without all doubt it has a similitude of nature, and only requires the efforts of an industrious and skilful nation, to be added to the number of our domestics. It is not *now* known what were the pains and dangers which were first undergone to reclaim the breed of horses from savage ferocity; these, no doubt, made an equal opposition; but, by being opposed by an industrious and enterprising race of mankind, their spirit was at last subdued, and their freedom restrained. It is otherwise with regard to the zebra; it is the native of countries where the human inhabitants are but little raised above the quadruped. The natives of Angola, or Caffraria, have no other idea of advantage from horses but as they are good for food; neither the fine stature of the Arabian courser, nor the delicate colourings of the zebra, have any allurements to a race of people, who only consider the quantity of flesh, and not its conformation. The delicacy of the zebra's shape, or the painted elegance of its form, are no more regarded by such, than by the lion

that makes it his prey. For this reason, therefore, the zebra may hitherto have continued wild, because it is the native of a country where there have been no successive efforts made to reclaim it. All pursuits that have been hitherto instituted against it, were rather against its life than its liberty: the animal has thus been long taught to consider man as its most mortal enemy; and it is not to be wondered that it refuses to yield obedience where it has so seldom experienced mercy. There is a kind of knowledge in all animals, that I have often considered with amazement; which is, that they seem perfectly to know their enemies, and to avoid them. Instinct, indeed, may teach the deer to fly from the lion; or the mouse to avoid the cat; but what is the principle that teaches the dog to attack the dog-butcher wherever he sees him? In China, where the killing and dressing dogs is a trade, whenever one of these people moves out, all the dogs of the village, or the street, are sure to be after him. This I should hardly have believed, but that I have seen more than one instance of it among ourselves. I have seen a poor fellow, who made a practice of stealing and killing dogs for their skins, pursued in full cry for three or four streets together, by all the bolder breed of dogs, while the weaker flew from his presence with affright. How these animals could thus find out their enemy, and pursue him, appears I own unaccountable, but such is the fact; and it not only obtains in dogs, but in several other animals, though perhaps to a less degree. This very probably may have been, in some measure, a cause that has hitherto kept the zebra in its state of natural wildness; and in which it may continue, till kinder treatment shall have reconciled it to its pursuers.

It is very likely, therefore, as a more civilized people are now placed at the Cape of Good Hope, which is the chief place where this animal is found, that we may have them tamed and rendered serviceable. Nor is its extraordinary beauty the only motive we have for wishing this animal among the number of our dependents: its swiftness is said to surpass that of all others; so that the speed of a zebra is become a proverb among the Spaniards and Portuguese. It stands better upon its legs also than a horse; and is consequently stronger in proportion. Thus, if by proper care

we improved the breed, as we have in other instances, we should probably in time to come have a race as large as the horse, as fleet, as strong, and much more beautiful.

The zebra, as was said, is chiefly a native of the Cape of Good Hope. It is also found in the kingdom of Angola; and, as we are assured by Lopez, in several provinces also of Barbary. In those boundless forests it has nothing to restrain its liberty; it is too shy to be caught in traps, and therefore seldom taken alive. It would seem, therefore, that none of them have ever been brought into Europe, that were caught sufficiently young, so as to be untinctured by their original state of wildness. The Portuguese, indeed, pretend that they have been able to tame them, and that they have sent four from Africa to Lisbon, which were so far brought under, as to draw the King's coach:* they add, that the person who sent them over, had the office of notary conferred upon him for his reward, which was to remain to him and his posterity for ever: but I do not find this confirmed by any person who says he saw them. Of those which were sent to Brazil, not one could be tamed; they would permit one man only to approach them; they were tied up very short; and one of them, which had by some means got loose, actually killed his groom, having bitten him to death.† Notwithstanding this, I believe, were the zebra taken up very young, and properly treated, it might be rendered as tame as another animal; and Merolla, who saw many of them, asserts, that when tamed, which he speaks of as being common enough, they are not less estimable for their swiftness than their beauty.

This animal, which is neither to be found in Europe, Asia, or America, is nevertheless very easily fed. That which came over into England some years ago, would eat almost any thing, such as bread, meat, and tobacco; that which is now among us, subsists entirely upon hay. As it so nearly resembles the horse and the ass in structure, so it probably brings forth annually as they do. The noise they make is neither like that of a horse or an ass, but more resembling the confused barking of a mastiff dog. In the two which I saw, there was a circumstance that seems to

* Dapper. † Pyrard. tom. ii. p. 376.

have escaped naturalists; which is, that the skin hangs loose below the jaw upon the neck, in a kind of dewlap, which takes away much from the general beauty. But whether this be a natural or accidental blemish, I will not take upon me to determine.

These animals are often sent as presents to the princes of the East. We are told, that one of the governors of Batavia gave a zebra, which had been sent to him from Africa, to the emperor of Japan, for which he received, as an equivalent for the company, a present, to the value of sixty thousand crowns.* Teller also relates, that the Great Mogul gave two thousand ducats for one of them. And it is frequent with the African ambassadors to the court of Constantinople, to bring some of these animals with them, as presents for the Grand Signior.†

* Navendorf.

† In addition to these species may be mentioned the Quagga. This animal, which used to be confounded with the zebra, is now acknowledged to be quite distinct. It inhabits the same parts of Africa as the zebra, but is always found in separate herds, never associating with it. It is about the same size as the zebra, but less elegant in its shape and marks; and is of a much more docile nature; the Dutch colonists at the Cape having been said to tame them, and use them for the draught and saddle. Its general colour is of a ferruginous tinge, with brown stripes. These stripes, however, are much fewer in number than those of the zebra, and much less elegantly disposed, there being seldom any on the haunches, shoulders, and legs; and, on the hinder parts, they gradually diminish into spots



T. Dixon sc.

1. GALLOWAY COW. 2. WILD BULL. 3. BISON.

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BOOK II.

OF RUMINATING ANIMALS.

CHAP. I.

INTRODUCTION.

OF all animals, those that chew the cud are the most harmless, and the most easily tamed. As they live entirely upon vegetables, it is neither their interest nor their pleasure to make war upon the rest of the brute creation; content with the pastures where they are placed, they seldom desire to change, while they are furnished with a proper supply; and, fearing nothing from each other, they generally go in herds for their mutual security. All the fiercest of the carnivorous kinds seek their food in gloomy solitude; these, on the contrary, range together; the very meanest of them are found to unite in each other's defence; and the hare itself is a gregarious animal, in those countries where it has no other enemies but the beasts of the forests to guard against.

As the food of ruminant animals is entirely of the vegetable kind, and as this is very easily procured, so these animals seem naturally more indolent and less artful than those of the carnivorous kinds; and as their appetites are more simple, their instincts seem to be less capable of variation. The fox or the wolf are for ever prowling; their long habits of want give them a degree of sharpness and cunning; their life is a continued scene of stratagem and escape: but the patient ox, or the deer, enjoy the repast that nature has abundantly provided; certain of subsistence, and content with security.

As nature has furnished these animals with an appetite for such coarse and simple nutriment, so she has enlarged the capacity of the intestines, to take in a greater supply. In the carnivorous kinds, as their food is nourishing and juicy, their stomachs are but small, and their intestines short; but in these, whose pasture is coarse, and where much must be

accumulated before any quantity of nourishment can be obtained, their stomachs are large and numerous, and their intestines long and muscular. The bowels of a ruminating animal may be considered as an elaboratory, with vessels in it, fitted for various transmutations. It requires a long and tedious process before grass can be transmuted into flesh; and for this purpose, nature, in general, has furnished such animals as feed upon grass with four stomachs, through which the food successively passes and undergoes the proper separations.*

Of the four stomachs with which ruminant animals are furnished, the first is called the *paunch*, which receives the food after it has been slightly chewed; the second is called the *honeycomb*, and is properly nothing more than a continuation of the former: these two, which are very capacious, the animal fills as fast as it can, and then lies down to ruminate; which may be properly considered as a kind of vomiting without effort or pain. The two stomachs above-mentioned being filled with as much as they can contain, and the grass, which was slightly chewed, beginning to swell with the heat of the situation, it dilates the stomachs, and these again contract upon their contents. The aliment, thus squeezed, has but two passages to escape at; one into the third stomach, which is very narrow; and the other back, by the gullet, into the mouth, which is wider. The greatest quantity, therefore, is driven back, through the largest aperture, into the mouth, to be chewed a second time; while a small part, and that only the most liquid, is driven into the third stomach, through the orifice which is so small. The food which is driven to the mouth, and chewed a second time, is thus rendered more soft and moist, and becomes at last liquid enough to pass into the conduit that goes to the third stomach, where it undergoes a still farther comminution. In this stomach, which is called the *manifold*, from the number of its leaves, all which tend to promote digestion, the grass has the appearance of boiled spinage, but not yet

* All quadrupeds that chew the cud have suet instead of the soft fat of other animals; and they have the awkward habit of rising, when in a recumbent posture, upon their hind legs first. A cow, when she rises from the ground, places herself on the fore-knees, and then lifts up the whole hinder parts. A horse springs up first on his fore-legs, and then rises up his hinder parts. This may be owing to the different conformation of the stomach.

sufficiently reduced, so as to make a part of the animal's nourishment; it requires the operation of the fourth stomach for this purpose, where it undergoes a complete maceration, and is separated to be turned into chyle.

But nature has not been less careful in another respect, in fitting the intestines of these animals for their food. In the carnivorous kinds they are thin and lean; but in ruminating animals they are strong, fleshy, and well covered with fat. Every precaution seems taken that can help their digestion: their stomach is strong and muscular, the more readily to act upon its contents; their intestines are lined with fat, the better to preserve their warmth; and they are extended to a much greater length, so as to extract every part of that nourishment which their vegetable food so scantily supplies.

In this manner are all quadrupeds of the cow, the sheep, or the deer kind, seen to ruminate; being thus furnished with four stomachs, for the macerating of their food. These, therefore, may most properly be called the *ruminant kinds*; although there are many others that have this quality in a less observable degree. The rhinoceros, the camel, the horse, the rabbit, the marmotte, and the squirrel, all chew the cud by intervals, although they are not furnished with stomachs like the former. But not these alone, there are numberless other animals that appear to ruminate; not only birds, but fishes and insects. Among birds are the pelican, the stork, the heron, the pigeon, and the turtle; these have a power of disgorging their food to feed their young. Among fishes are lobsters, crabs, and that fish called the *dorado*. The salmon also is said to be of this number: and, if we may believe Ovid, the *scarus* likewise; of which he says,*

> Of all the fish that graze beneath the flood,
> He *only* ruminates his former food.

Of insects, the ruminating tribe is still larger; the mole, the cricket, the wasp, the drone, the bee, the grasshopper, and the beetle. All these animals either actually chew the cud, or seem at least to ruminate. They have the stomach composed of muscular fibres, by means whereof the food is ground up and down, in the same manner as in those which

* At contra herbosa pisces laxantur arena,
Ut scarus epastus *solus* qui ruminant escas.

are particularly distinguished by the appellation of *ruminants*.

But not these alone; men themselves have been often known to ruminate, and some even with pleasure. The accounts of these calamities, for such I must consider them, incident to our fellow-creatures, are not very pleasant to read: yet I must transcribe a short one, as given us by Slare, in the Philosophical Transactions, as it may, in some measure, shew the satisfaction which the lower tribes of animals enjoy while they ruminate. The man in question was a citizen of Bristol, of about twenty years of age, and, what seemed more extraordinary still, of a ruminating family, for his father was frequently subject to the same infirmity, or amusement, as he himself perhaps would call it. This young man usually began to chew his meat over again within about a quarter of an hour after eating. His ruminating after a full meal generally lasted about an hour and a half; nor could he sleep until this task was performed. The victuals, upon the return, tasted even more pleasantly than at first; and returned as if they had been beaten up in a mortar. If he ate a variety of things, that which he ate first came up again first; and if this return was interrupted for any time, it produced sickness and disorder, and he was never well till it returned. Instances of this kind, however, are rare and accidental; and it is happy for mankind that they are so. Of all other animals, we spend the least time in eating; this is one of the great distinctions between us and the brute creation; and eating is a pleasure of so low a kind, that none but such as are nearly allied to the quadruped, desire its prolongation.

CHAP. II.

OF QUADRUPEDS OF THE COW KIND.*

Of all ruminant animals, those of the cow kind deserve the first rank, both for their size, their beauty, and their ser-

* The animals of this kind have the horns hollow, smooth, turned outwards and forwards, in a semicircular form; in the lower jaw there are eight front teeth, but none in the upper: and there are no tusks in either.

vices. The horse is more properly an animal belonging to the rich; the sheep chiefly thrives in a flock, and requires attendance; but the cow is more especially the poor man's pride, his riches, and his support. There are many of our peasantry that have no other possession but a cow; and even of the advantages resulting from this most useful creature, the poor are but the nominal possessors. Its flesh they cannot pretend to taste, since then their whole riches are at once destroyed; its calf they are obliged to fatten for sale, since veal is a delicacy they could not make any pretensions to; its very milk is wrought into butter and cheese for the tables of their masters; while they have no share, even in their own possession, but the choice of their market. I cannot bear to hear the rich crying out for liberty while they thus starve their fellow-creatures, and feed them up with an imaginary good, while they monopolize the real benefits of nature.

In those countries where the men are under better subordination, this excellent animal is of more general advantage. In Germany, Poland, and Switzerland, every peasant keeps two or three cows, not for the benefit of his master, but for himself. The meanest of the peasants there kills one cow at least for his own table, which he salts and hangs up, and thus preserves as a delicacy all the year round. There is scarcely a cottage in those countries that is not hung round with these marks of hospitality; and which often make the owner better contented with hunger, since he has it in his power to be luxurious when he thinks proper. A piece of beef hung up there is considered as an elegant piece of furniture, which, though seldom touched, at least argues the possessor's opulence and ease. But it is very different, for some years past, in this country, where our lower rustics at least are utterly unable to purchase meat any part of the year, and by them even butter is considered as an article of extravagance.

The climate and pasture of Great Britain, however, are excellently adapted to this animal's moderate nature; and the verdure and the fertility of our plains are perfectly suited to the manner of its feeding; for wanting the upper foreteeth, it loves to graze on a high rich pasture. This animal seems but little regardful of the quality of its food, provided it be supplied in sufficient abundance; it makes no par-

ticular distinction in the choice of its herbage, but indiscriminately and hastily devours the proper quantity. For this reason, in our pastures, where the grass is rather high than succulent, more flourishing than nutritious, the cow thrives admirably; and there is no part of Europe where the tame animal grows larger, yields more milk, or more readily fattens, than with us.

Our pastures supply them with abundance, and they in return enrich the pasture; for, of all animals, the cow seems to give back more than it takes from the soil. The horse and the sheep are known, in a course of years, to impoverish the ground. The land where they have fed becomes weedy, and the vegetables coarse and unpalatable; on the contrary, the pasture where the cow has been bred, acquires a finer, softer surface, and becomes every year more beautiful and even. The reason is, that the horse being furnished with fore-teeth in the upper jaw, nips the grass closely, and therefore only chooses that which is the most delicate and tender; the sheep also, though with respect to its teeth formed like the cow, only bites the most succulent parts of the herbage: these animals, therefore, leave all the high weeds standing; and while they cut the finer grass too closely, suffer the ranker herbage to vegetate and overrun the pasture. But it is otherwise with the cow: as its teeth cannot come so close to the ground as those of the horse, nor so readily as those of the sheep, which are less, it is obliged to feed upon the tallest vegetables that offer; thus it eats them all down, and in time, levels the surface of the pasture.

The age of the cow is known by the teeth and horns. This animal is furnished with eight cutting teeth in the lower jaw; at the age of ten months the two middlemost of these fall out, and are replaced by others that are not so white, but broader; at the age of sixteen months the two next milk-white teeth fall out likewise, and others come up in their room; thus, at the end of every six months, the creature loses and gains, till at the age of three years all the cutting-teeth are renewed, and then they are long, pretty white, and equal; but in proportion as the animal advances in years, they become irregular and black, their inequalities become smoother, and the animal less capable of chewing its food. Thus the cow often declines from this single cause; for as it is obliged to eat a great deal to support life, and as

the smoothness of the teeth makes the difficulty of chewing great, a sufficient quantity of food cannot be supplied to the stomach. Thus the poor animal sinks in the midst of plenty, and every year grows leaner and leaner till it dies.

The horns are another and a surer method of determining this animal's age. At three years old, it sheds its horns, and new ones arise in their place, which continue as long as it lives; at four years of age, the cow has small pointed, neat smooth horns, thickest near the head; at five, the horns become larger, and are marked round with the former year's growth. Thus, while the animal continues to live, the horns continue to lengthen; and every year a new ring is added at the root; so that allowing three years before their appearance, and then reckoning the number of rings, we have, in both together, the animal's age exactly.

As we have indisputably the best breed of horned cattle of any in Europe, so it was not without the same assiduity that we came to excel in these, as in our horses. The breed of cows has been entirely improved by a foreign mixture, properly adapted to supply the imperfections of our own. Such as are purely British are far inferior in size to those on many parts of the continent; but those which we have thus improved by far excel all others. Our Lincolnshire kind derive their size from the Holstein breed: and the large hornless cattle that are bred in some parts of England, came originally from Poland. We were once famous for a wild breed of these animals, but these have long since been worn out; and perhaps no kingdom in Europe can furnish so few wild animals of all kinds as our own. Cultivation and agriculture are sure to banish these wherever they are found; and every addition a country receives from art drives away those animals that are only fitted for a state of nature.

Of all quadrupeds, the cow seems most liable to alteration from its pasture. In the different parts of our own country we easily perceive the great varieties produced among these animals, by the richness or poverty of the soil. In some they grow to a great bulk; and I have seen an ox sixteen hands high, which is taller than the general run of our horses. In others, they appear as diminutive; being not so large as an ass. The breed of the Isle of Man, and most parts of Scotland, is much less in general than in England

or Ireland: they are differently shaped also, the dewlap being much smaller, and, as the expression is, the beast has more of the ewe neck. This, till some years ago, was considered in cattle as a deformity; and the cow was chosen, according to Virgil's direction, with a large dewlap: however, at present, it is the universal opinion, that the cow wants in udder what it has in neck; and the larger the dewlap, the smaller is the quantity of its milk. Our graziers now, therefore, endeavour to mix the two breeds; the large Holstein with the small northern; and from both results that fine milch breed, which excels the cattle of any other part of the world.

This difference, arising from pasture, is more observable in other countries than in our own. The cow kind is to be found in almost every part of the world, large in proportion to the richness of the pasture; and small as the animal is stinted in its food. Thus Africa is remarkable for the largest and the smallest cattle of this kind; as is also India, Poland, Switzerland, and several other parts of Europe. Among the Eluth Tartars, where the pastures are remarkably rich and nourishing, the cow becomes so large that he must be a tall man who can reach the tip of its shoulder. On the contrary, in France, where the animal is stinted in its food, and driven from the most flourishing pastures, it greatly degenerates.

But the differences in the size of this animal are not so remarkable as those which are found in its form, its hair, and its horns. The difference is so very extraordinary in many of them, that they have been even considered as a different kind of creature, and names have been given them as a distinct species, when in reality they are all the same.* In this manner the urus and the bison have been considered, from the variety in their make, to be distinct in their production; but they are all, in fact, the descendants of one common stock, as they have that certain mark of unity, they breed and propagate among each other. Naturalists have, therefore, laboured under an obvious error, when, because of the extreme bulk of the urus, or because of the lump upon the back of the bison, they assigned them different places in the creation, and sepa-

* Buffon, vol. xxiii. p. 78.

rated a class of animals which was really united. It is true, the horse and the ass do not differ so much in form, as the cow and the bison; nevertheless, the former are distinct animals, as their breed is marked with sterility; the latter are animals of the same kind, as their breed is fruitful, and a race of animals is produced, in which the hump belonging to the bison is soon worn away. The differences, therefore, between the cow, the urus, and the bison, are merely accidental. The same caprice in nature that has given horns to some cows, and denied them to others, may also have given the bison a hump, or increased the bulk of the urus; it may have given the one a mane, or denied a sufficiency of hair to the other.

But before we proceed farther, it may be proper to describe these varieties, which have been thus taken for distinct kinds.* The urus, or wild bull, is chiefly to be met with in the province of Lithuania; and grows to a size that scarcely any other animal, except the elephant, is found to equal. It is quite black, except a stripe mixed with white, that runs from the neck to the tail, along the top of the back; the horns are short, thick, and strong; the eyes are fierce and fiery; the forehead is adorned with a kind of garland of black curled hair, and some of them are found to have beards of the same; the neck is short and strong; and the skin has an odour of musk. The female, though not so big as the male, exceeds the largest of our bulls in size; nevertheless, her udder and teats are so small, that they can scarcely be perceived. Upon the whole, however, this animal resembles the tame one very exactly, except in some trifling varieties, which his state of wildness, or the richness of the pastures where he is found, may easily have produced.

The bison, which is another variety of the cow kind, differs from the rest, in having a lump between its shoulders. These animals are of various kinds; some very large, others as diminutively little. In general, to regard this animal's fore-parts, he has somewhat the look of a lion, with a long shaggy mane, and a beard under his chin; his head is little, his eyes red and fiery, with a furious look; the forehead is large, and the horns so big, and so far asunder, that

* This description is chiefly taken from Klein.

three men might often sit between them. On the middle of the back there grows a bunch almost as high as that of a camel, covered with hair, and which is considered as a great delicacy by those that hunt him. There is no pursuing him with safety, except in forests where there are trees large enough to hide the hunters. He is generally taken by pit-falls: the inhabitants of those countries where he is found wild, digging holes in the ground, and covering them over with boughs of trees and grass; then provoking the bison to pursue them, they get on the opposite side of the pit-fall, while the furious animal, running head foremost, falls into the pit prepared for him, and is there quickly overcome and slain.

Besides these real distinctions in the cow kind, there have been many others made, that appear to be in name only. Thus the bonasus, of which naturalists have given us long descriptions, is supposed by Klein and Buffon to be no more than another name for the bison, as the descriptions given of them by the ancients coincide. The bubalus also of the ancients, which some have supposed to belong to the cow kind, Buffon places among the lower class of ruminant quadrupeds, as it most resembles them in size, shape, and the figure of its horns. Of all the varieties, therefore, of the cow kind, there are but two that are really distinct; namely, the cow and the buffalo: these two are separated by nature; they seem to bear an antipathy to each other; they avoid each other, and may be considered as much removed as the horse is from the ass or the zebra. When, therefore, we have described the varieties of the cow kind, we shall pass on to the buffalo, which, being a different animal, requires a separate history.

There is scarcely a part of the world, as was said before, in which the cow is not found in some one of its varieties; either large, like the urus, or humped, as the bison; with straight horns, or bending, inverted backwards, or turning sideways to the cheek, like those of the ram; and, in many countries, they are found without any horns whatsoever. But, to be more particular, beginning at the north, the few kine which subsist in Iceland, are without horns, although of the same race originally with ours. The size of these is rather relative to the goodness of the pasture, than the warmth or coldness of the climate. The Dutch

frequently bring great quantities of lean cattle from Denmark, which they fatten on their own rich grounds. These are in general of a larger size than their own natural breed; and they fatten very easily. The cattle of the Ukraine, where the pasture is excellent, become very fat, and are considered as one of the largest breeds of Europe. In Switzerland, where the mountains are covered with rich nourishing herbage, which is entirely reserved for their kine, these animals grow to a very large size. On the contrary, in France, where they get no other grass but what is thought unfit for horses, they dwindle and grow lean. In some parts of Spain the cow grows to a good size: those wild bulls, however, which they pride themselves so much in combating, are a very mean despicable little animal, and somewhat shaped like one of our cows, with nothing of that peculiar sternness of aspect for which our bulls are remarkable. In Barbary, and the provinces of Africa, where the ground is dry, and the pasturage short, the cows are of a very small breed, and give milk in proportion. On the contrary, in Ethiopia, they are of a prodigious bigness. The same holds in Persia and Tartary; where, in some places, they are very small, and, in others, of an amazing stature. It is thus, in almost every part of the world, this animal is found to correspond in size to the quantity of its provision.

If we examine the form of these animals, as they are found tame, in different regions, we shall find, that the breed of the urus, or those without a hump, chiefly occupies the cold and the temperate zones, and is not so much dispersed towards the south. On the contrary, the breed of the bison, or the animal with a hump, is found in all the southern parts of the world; throughout the vast continent of India; throughout Africa, from mount Atlas to the Cape of Good Hope. In all these countries, the bison seems chiefly to prevail; where they are found to have a smooth soft hair, are very nimble of foot, and in some measure supply the want of horses. The bison breed is also more expert and docile than ours; many of them, when they carry burdens, bend their knees to take them up, or set them down: they are treated, therefore, by the natives of those countries, with a degree of tenderness and care equal to their utility; and the respect for them

in India has degenerated even into blind adoration. But it is among the Hottentots where these animals are chiefly esteemed, as being more than commonly serviceable. They are their fellow domestics, the companions of their pleasures and fatigues; the cow is at once the Hottentot's protector and servant, assists him in attending his flocks, and guarding them against every invader: while the sheep are grazing, the faithful backely, as this kind of cow is called, stands or grazes beside them; still, however, attentive to the looks of its master, the backely flies round the field, herds in the sheep that are straying, obliges them to keep within proper limits, and shews no mercy to robbers, or even strangers, who attempt to plunder. But it is not the plunderers of the flock alone, but even the enemies of the nation, that these backelies are taught to combat. Every army of Hottentots is furnished with a proper herd of these, which are let loose against the enemy, when the occasion is most convenient. Being thus sent forward, they overturn all before them; they strike every opposer down with their horns, and trample upon them with their feet; and thus often procure their masters an easy victory, even before they have attempted to strike a blow. An animal so serviceable, it may be supposed, is not without its reward. The backely lives in the same cottage with its master, and, by long habit, gains an affection for him; and in proportion as the man approaches to the brute, so the brute seems to attain even to some share of human sagacity. The Hottentot and his backely thus mutually assist each other; and when the latter happens to die, a new one is chosen to succeed him, by a counsel of the old men of the village. The new backely is then joined with one of the veterans of his own kind, from whom he learns his art, becomes social and diligent, and is taken for life into human friendship and protection.

The bisons, or cows with a hump, are found to differ very much from each other in the several parts of the world where they are found. The wild ones of this kind, as with us, are much larger than the tame. Some have horns, and some are without any; some have them depressed, and some raised in such a manner that they are used as weapons of annoyance or defence; some are extremely large, and others among them, such as the zebu,

or Barbary cow, are very small. They are all, however, equally docile and gentle when tamed; and, in general, furnished with a fine lustrous soft hair, more beautiful than that of our own breed; their hump is also of different sizes, in some weighing from forty to fifty pounds, in others less: it is not, however, to be considered as a part necessarily belonging to the animal; and probably it might be cut away without much injury: it resembles a gristly fat; and, as I am assured, cuts and tastes somewhat like a dressed udder. The bisons of Malabar, Abyssinia, and Madagascar, are of the great kind, as the pastures there are plentiful. Those of Arabia Petræa, and most parts of Africa, are small, and of the zebu or little kind. In America, especially towards the north, the bison is well known. The American bison, however, is found to be rather less than that of the ancient continent; its hair is longer and thicker, its beard more remarkable, and its hide more lustrous and soft. There are many of them brought up tame in Carolina; however, their wild dispositions still seem to continue, for they break through all fences to get into the corn-fields, and lead the whole tame herd after them, wherever they penetrate. They breed also with the tame kinds originally brought over from Europe; and thus produce a race peculiar to that country.

From all this it appears,* that naturalists have given various names to animals in reality the same, and only differing in some few accidental circumstances. The wild cow and the tame, the animal belonging to Europe, and that of Asia, Africa, and America, the bonasus and the urus, the bison and the zebu, are all one and the same, propagate among each other, and, in the course of a few generations, the hump wears away, and scarcely any vestiges of savage fierceness are found to remain. Of all animals, therefore, except man alone, the cow seems most extensively propagated. Its nature seems equally capable of the rigours of heat and cold. It is an inhabitant as well of the frozen fields of Iceland, as the burning deserts of Lybia. It seems an ancient inmate in every climate,

* Buffon, vol. xxiii. p. 130.

domestic and tame in those countries which have been civilized, savage and wild in the countries which are less peopled, but capable of being made useful in all; able to defend itself in a state of nature against the most powerful enemy of the forest; and only subordinate to man, whose force it has experienced, and whose aid it at last seems to require. However wild the calves are, which are taken from the dam in a savage state, either in Africa or Asia, they soon become humble, patient, and familiar; and man may be considered in those countries, as almost helpless without their assistance. Other animals preserve their nature or their form with inflexible perseverance; but these, in every respect, suit themselves to the appetites and conveniences of mankind; and as their shapes are found to alter, so also does their nature; in no animal is there seen a greater variety of kinds, and in none a more humble and pliant disposition.

THE BUFFALO.

If we should compare the shape of our common cow with that of the bison, the difference will appear very great. The shaggy mane of the latter, the beard, the curled forehead, the inverted horns, the broad breast, and the narrow hinder parts, give it the appearance rather of a lion than a cow; and fit it more for a state of war with mankind, than a state of servitude. Yet, notwithstanding these appearances, both animals are found to be the same; or at least so nearly allied, that they breed among each other, and propagate a race that continues the kind.

On the other hand, if we compare the buffalo with our common cow, no two animals can be more nearly alike, either in their form or their nature; both equally submissive to the yoke, both often living under the same roof, and employed in the same domestic services; the make and the turn of their bodies so much alike, that it requires a close attention to distinguish them: and yet, after all this, no two animals can be more distinct, or seem to have stronger antipathies to each other.* Were there but one of each

* Buffon.

kind remaining, it is probable the race of both would shortly be extinct. However, such is the fixed aversion formed between these creatures, that the cow refuses to breed with the buffalo, which it nearly resembles; while it is known to propagate with the bison, to which it has, in point of form, but a very distant similitude.

The buffalo is, upon the whole, by no means so beautiful a creature as the cow; his figure is more clumsy and awkward; his air is wilder; and he carries his head lower, and nearer the ground; his limbs are less fleshy, and his tail more naked of hair; his body is shorter and thicker than that of the cow kind; his legs are higher; his head smaller; his horns not so round, black, and compressed, with a bunch of curled hair hanging down between them; his skin is also harder and thicker, more black, and less furnished with hair; his flesh, which is hard and blackish, is not only disagreeable to the taste, but likewise to the smell. The milk of the female is by no means so good as that of the cow; it is however produced in great abundance. In the warm countries, almost all their cheese is made of the milk of the buffalo; and they supply butter also in large quantities. The veal of the young buffalo is not better eating than the beef of the old. The hide of this animal seems to be the most valuable thing he furnishes. The leather made of it is well known for its thickness, softness, and impenetrability. As these animals are, in general, larger and stronger than the cow, they are usefully employed in agriculture. They are used in drawing burdens, and sometimes in carrying them; being guided by a ring, which is thrust through their nose. Two buffaloes yoked in a waggon, are said to draw more than four strong horses; as their heads and necks are naturally bent downward, they are thus better fitted for the draught, and the whole weight of their bodies is applied to the carriage that is to be drawn forward.

From the size and bulk of the buffalo, we may be easily led to conclude that he is a native of the warmer climates. The largest quadrupeds are generally found in the torrid zone; and the buffalo is inferior, in point of size, only to the elephant, the rhinoceros, or the hippopotamus. The camelopard or the camel may indeed be taller, but they are neither so long, nor near so corpulent. Accordingly,

we find this animal wild in many parts of India; and tamed also, wherever the natives have occasion for his services. The wild buffaloes are very dangerous animals, and are often found to gore travellers to death, and then trample them with their feet, until they have entirely mangled the whole body: however, in the woods they are not so much to be feared as in the plains, because in the violence of their pursuit their large horns are apt to be entangled in the branches of the trees, which gives those who have been surprised by them time to escape the danger. There is scarcely any other method of avoiding their pursuit; they run with great swiftness; they overturn a tree of moderate growth; and are such swimmers, as to cross the largest rivers without any difficulty. In this manner, like all other large animals of the torrid zone, they are very fond of the water; and, in the midst of their pursuit, often plunge in, in order to cool themselves. The negroes of Guinea, and the Indians of Malabar, where buffaloes are in great abundance, take great delight in hunting and destroying them: however, they never attempt to face the buffalo openly; but, generally climbing up the tree, shoot at him from thence, and do not come down till they find they have effectually dispatched him. When they are tamed, no animal can be more patient or humble; and though by no means so docile as the cow kind, yet they go through domestic drudgeries with more strength and perseverance.

Although these animals be chiefly found in the torrid zone, yet they are bred in several parts of Europe, particularly in Italy, where they make the food and the riches of the poor. The female produces but one at a time, in the same manner as the cow; but they are very different in the times of gestation; for the cow, as we know, goes but nine months; whereas the buffalo continues pregnant for twelve. They are all afraid of fire; and, perhaps, in consequence of this, have an aversion to red colours, that resemble the colour of flame: it is said, that in those countries where they are found in plenty, no person dares to dress in scarlet. In general they are inoffensive animals, if undisturbed; as indeed all those which feed upon grass are found to be; but when they are wounded, or when even but fired at, nothing then can stop their fury;

they then turn up the ground with their fore-feet, bellow much louder and more terribly than the bull, and make at the object of their resentment with ungovernable rage. It is happy, in such circumstances, if the person they pursue has a wall to escape over, or some such obstacle; otherwise they soon overtake, and instantly destroy him. It is remarkable, however, that although their horns are so very formidable, they in general make more use of their feet in combat, and rather tread their enemies to death than gore them.

Having thus gone through the history of these animals, it may be proper to observe, that no names have been more indiscriminately used than those of the bull, the urus, the bison, and the buffalo. It therefore becomes such as would have distinct ideas of each, to be careful in separating the kinds, the one from the other, allowing the cow for the standard of all. The urus, whether of the large enormous kind of Lithuania, or the smaller race of Spain, whether with long or short horns, whether with or without long hair in the forehead, is every way the same with what our common breed was before they were taken from the forest, and reduced to a state of servitude. The bison, and all its varieties, which are known by a hump between the shoulders, is also to be ranked in the same class. This animal, whether with crooked or with straight horns, whether they be turned towards the cheek, or totally wanting, whether it be large or diminutive, whatever be its colour, or whatever the length of its hair, whether called the *bonasus* by some, or the *bubalus* by others, is but a variety of the cow kind, with whom it breeds, and with whom of consequence it has the closest connexion. Lastly, the buffalo, though shaped much more like the cow, is a distinct kind by itself, that never mixes with any of the former; that goes twelve months with young, whereas the cow goes but nine; that testifies an aversion to the latter; and, though bred under the same roof, or feeding in the same pasture, has always kept separate; and makes a distinct race in all parts of the world. These two kinds are supposed to be the only real varieties in the cow kind, of which naturalists have given so many varieties. With respect to some circumstances mentioned by travellers, such as that of many kinds defending themselves by voiding their dung against their pursuers; this is a practice which they have in common with other timid creatures when

pursued, and arises rather from fear than a desire of defence. The musky smell also by which some have been distinguished, is found common to many of these kinds, in a state of nature; and does not properly make the characteristic marks of any. The particular kind of noise also, which some of them are known to make, which rather resembles grunting than bellowing or lowing, is but a savage variety, which many wild animals have, and yet lose when brought into a state of tameness. For these reasons, Mr. Buffon, whom I have followed in this description, is of opinion, that the zebu, or little African cow, and the grunting, or Siberian cow, are but different races of the bison; as the shape of the horns, or the length of the hair, are never properly characteristic marks of any animal, but are found to vary with climate, food, and cultivation.

In this manner the number of animals of the cow kind, which naturalists have extended to eight or ten sorts, are reduced to two; and as the utmost deference is paid to the opinion of Mr. Buffon in this particular, I have taken him for my guide. Nevertheless, there is an animal of the cow kind, which neither he, nor any other naturalist that I know of, has hitherto described, yet which makes a very distinct class, and may be added as a third species.

This animal was shown some years ago in London, and seemed to unite many of the characteristics of the cow and the hog; having the head, the horns, and the tail, of the former; with the bristles, the colour, and the grunting, of the latter. It was about the size of an ass, but broader and thicker; the colour resembling that of a hog, and the hair bristly, as in that animal. The hair upon the body was thin, as in the hog; and a row of bristles ran along the spine, rather shorter and softer than in the hog kind. The head was rather larger than that of a cow; the teeth were entirely resembling those of that animal, and the tongue was rough in like manner. It fed upon hay; and consequently its internal conformation must have resembled that of the cow kind more than the hog, whose food is always chosen of a kind more succulent. The eyes were placed in the head as with the cow, and were pretty nearly of the same colour; the horns were black and flattish, but bent rather backwards to the neck, as in the goat kind; the neck was short and thick,

and the back rather rising in the middle; it was cloven-footed, like the cow, without those hinder claws that are found in the hog kinds. But the greatest variety of all in this extraordinary creature, which was a female, was, that it had but two teats, and consequently, in that respect, resembled neither of the kinds to which, in other circumstances, it bore so strong a similitude. Whether this animal was a distinct kind, or a monster, I will not pretend to say: it was shown under the name of the bonasus; and it was said, by the person who showed it, to have come from India: but no credit is to be given to interested ignorance; the person only wanted to make the animal appear as extraordinary as possible; and I believe would scarcely scruple a lie or two to increase that wonder in us, by which he found the means of living.

CHAP. III.

OF ANIMALS OF THE SHEEP AND GOAT KIND.*

As no two animals are found entirely the same, so it is not to be expected that any two races of animals should exactly correspond in every particular. The goat and the sheep are apparently different in the form of their bodies, in their covering, and in their horns. They may, from hence, be considered as two different kinds, with regard to all common and domestic purposes. But if we come to examine them closer, and observe their internal conformation, no two animals can be more alike; their feet, their four stomachs,

* In the sheep kind the horns are hollow, wrinkled, perennial, bent backwards and outwards, into a circular or spiral form, and generally placed at the sides of the head; in the lower jaw there are eight front teeth, but none in the upper; there are no canine teeth in either. In the goat the horns are hollow, rough, compressed, and rise somewhat erect from the top of the head, and bend backwards; there are eight front teeth in the lower jaw, none in the upper, and no canine teeth in either; the chin is bearded.

their suet, their appetites, all are entirely the same, and shew the similitude between them; but what makes a much stronger connection is, that they propagate with each other. The buck-goat is found to produce with the ewe an animal that, in two or three generations, returns to the sheep, and seems to retain no marks of its ancient progenitor.* The sheep and the goat, therefore, may be considered as belonging to one family; and were the whole races reduced to one of each, they would quickly replenish the earth with their kind.

If we examine the sheep and goat internally, we shall find, as was said, that their conformation is entirely the same; nor is their structure very remote from that of the cow kind, which they resemble in their hoofs, and in their chewing the cud. Indeed, all ruminant animals are internally very much alike. The goat, the sheep, or the deer, exhibit to the eye of the anatomist the same parts in miniature which the cow or the bison exhibited in the great. But the differences between those animals are, nevertheless, sufficiently apparent. Nature has obviously marked the distinctions between the cow and the sheep kind, by their form and size; and they are also distinguished from those of the deer kind, by never shedding the horns. Indeed, the form and figure of these animals, if there were nothing else, would seldom fail of guiding us to the kind; and we might almost upon sight tell which belongs to the deer kind, and which are to be degraded into that of the goat. However, the annually shedding the horns in the deer, and the permanence in the sheep, draws a pretty exact line between the kinds; so that we may hold to this distinction only, and define the sheep and goat kind as ruminant animals of a smaller size, that never shed their horns.

If we consider these harmless and useful animals in one point of view, we shall find that both have been long reclaimed, and brought into a state of domestic servitude. Both seem to require protection from man; and are, in some measure, pleased with his society. The sheep, indeed, is the more serviceable creature of the two; but the goat has more sensibility and attachment. The attending

* Buffon, passim.

upon both was once the employment of the wisest and the best of men; and those have been ever supposed the happiest times in which these harmless creatures were considered as the chief objects of human attention. In the earliest ages, the goat seemed rather the greater favourite; and, indeed, it continues such, in some countries, to this day among the poor. However, the sheep has long since become the principal object of human care; while the goat is disregarded by the generality of mankind, or become the possession only of the lowest of the people. The sheep, therefore, and its varieties, may be considered first; and the goat, with all those of its kind, will then properly follow.

THE SHEEP.

Those animals that take refuge under the protection of man, in a few generations become indolent and helpless. Having lost the habit of self-defence, they seem to lose also the instincts of nature. The sheep, in its present domestic state, is, of all animals, the most defenceless and inoffensive. With its liberty, it seems to have been deprived of its swiftness and cunning; and what in the ass might rather be called patience, in the sheep appears to be stupidity. With no one quality to fit it for self-preservation, it makes vain efforts at all. Without swiftness, it endeavours to fly; and without strength, sometimes offers to oppose. But these feeble attempts rather incite than repress the insults of every enemy; and the dog follows the flock with greater delight upon seeing them fly, and attacks them with more fierceness upon their unsupported attempts at resistance. Indeed, they run together in flocks rather with the hopes of losing their single danger in the crowd, than of uniting to repress the attack by numbers. The sheep, therefore, were it exposed in its present state to struggle with its natural enemies of the forest, would soon be extirpated. Loaded with a heavy fleece, deprived of the defence of its horns, and rendered heavy, slow, and feeble, it can have no other safety than what it finds from man. This animal is now, therefore, obliged to rely solely upon that

art for protection, to which it originally owes its degradation.

But we are not to impute to nature the formation of an animal so utterly unprovided against its enemies, and so unfit for defence. The moufflon, which is the sheep in a savage state, is a bold, fleet creature, able to escape from the greater animals by its swiftness, or to oppose the smaller kinds with the arms it has received from nature. It is by human art alone that the sheep has become the tardy defenceless creature we find it. Every race of quadrupeds might easily be corrupted by the same allurements by which the sheep has been thus debilitated and depressed. While undisturbed, and properly supplied, none are found to set any bounds to their appetite. They all pursue their food while able, and continue to graze, till they often die of disorders occasioned by too much fatness. But it is very different with them in a state of nature: they are in the forest surrounded by dangers, and alarmed with unceasing hostilities; they are pursued every hour from one tract of country to another; and spend a great part of their time in attempts to avoid their enemies. Thus constantly exercised, and continually practising all the arts of defence and escape, the animal at once preserves its life and native independence, together with its swiftness, and the slender agility of its form.

The sheep, in its servile state, seems to be divested of all inclinations of its own; and of all animals it appears the most stupid. Every quadruped has a peculiar turn of countenance, a physiognomy, if we may so call it, that generally marks its nature. The sheep seems to have none of those traits that betoken either courage or cunning; its large eyes, separated from each other, its ears sticking out on each side, and its narrow nostrils, all testify the extreme simplicity of this creature; and the position of its horns also, shew that nature designed the sheep rather for flight than combat. It appears a large mass of flesh, supported upon four small straight legs, ill fitted for carrying such a burden; its motions are awkward, it is easily fatigued, and often sinks under the weight of its own corpulency. In proportion as these marks of human transformation are more numerous, the animal becomes more helpless and stupid.

Those which live upon a more fertile pasture, and grow fat, become entirely feeble; those that want horns are found more dull and heavy than the rest;* those whose fleeces are longest and finest are most subject to a variety of disorders; and, in short, whatever changes have been wrought in this animal by the industry of man are entirely calculated for human advantage, and not for that of the creature itself. It might require a succession of ages before the sheep could be restored to its primitive state of activity, so as to become a match for its pursuers of the forest.

The goat, which it resembles in so many other respects, is much its superor. The one has its particular attachment, sees danger, and generally contrives to escape it; but the other is timid without a cause, and secure when real danger approaches. Nor is the sheep, when bred up tame in the house, and familiarized with its keepers, less obstinately absurd: from being dull and timid, it then acquires a degree of pert familiarity; buts with its head, becomes mischievous, and shews itself every way unworthy of being singled out from the rest of the flock. Thus it seems rather formed for slavery than friendship; and framed more for the necessities than the amusements of mankind. There is but one instance in which the sheep shews any attachment to its keeper; and that is seen rather on the continent than among us in Great Britain. What I allude to is, their following the sound of the shepherd's pipe. Before I had seen them trained in this manner I had no conception of those descriptions in the old pastoral poets, of the shepherd leading his flock from one country to another. As I had been used only to see these harmless creatures driven before their keepers, I supposed that all the rest was but invention; but in many parts of the Alps, and even some provinces of France, the shepherd and his pipe are still continued with true antique simplicity. The flock is regularly penned every evening, to preserve them from the wolf; and the shepherd returns homeward at sun-set with his sheep following him, and seemingly pleased with the sound of the pipe, which is blown with a reed, and resembles the chanter of a bag-

* Daubenton upon the Sheep.

pipe. In this manner, in those countries that still continue poor, the Arcadian life is preserved in all its former purity; but in countries where a greater inequality of condition prevails, the shepherd is generally some poor wretch, who attends a flock from which he is to derive no benefits, and only guards those luxuries which he is not fated to share.

It does not appear, from early writers, that the sheep was bred in Britain; and it was not till several ages after this animal was cultivated, that the woollen manufacture was carried on among us.* That valuable branch of business lay for a considerable time in foreign hands; and we were obliged to import the cloth manufactured from our own materials. There were, notwithstanding, many unavailing efforts among our kings to introduce and preserve the manufacture at home. Henry the Second, by a patent granted to the weavers in London, directed, that if any cloth was found made of a mixture of Spanish wool, it should be burned by the mayor. Such edicts, at length, although but slowly, operated towards the establishing this trade among us. The Flemings, who at the revival of arts possessed the art of cloth-working in a superior degree, were invited to settle here; and soon after foreign cloth was prohibited from being worn in England. In the times of queen Elizabeth this manufacture received every encouragement; and many of the inhabitants of the Netherlands being then forced, by the tyranny of Spain, to take refuge in this country, they improved us in those arts, in which we at present excel the rest of the world. Every art, however, has its rise, its meridian, and its decline; and it is supposed by many, that the woollen manufacture has, for some time, been decaying amongst us. The cloth now made is thought to be much worse than that of some years past; being neither so firm nor fine; neither so much courted abroad, nor so serviceable at home.

No country, however, produces such sheep as England; either with larger fleeces, or better adapted for the business of clothing. Those of Spain, indeed, are finer, and we generally require some of their wool to work up with our own: but the weight of a Spanish fleece is no way

* British Zoology, vol. i. p. 23.

comparable to one of Lincoln or Warwickshire; and, in those counties it is no uncommon thing to give fifty guineas for a ram.

The sheep without horns are counted the best sort, because a great part of the animal's nourishment is supposed to go up into the horns.* Sheep, like other ruminant animals, want the upper fore-teeth; but have eight in the lower jaw: two of these drop, and are replaced at two years old; four of them are replaced at three years old; and all at four. The new teeth are easily known from the rest, by their freshness and whiteness. There are some breeds, however, in England, that never change their teeth at all; these the shepherds call the *leather-mouthed cattle;* and, as their teeth are thus long wearing, they are generally supposed to grow old a year or two before the rest.† The sheep brings forth one or two at a time; and sometimes three or four. The first lamb of an ewe is generally pot-bellied, short and thick, and of less value than those of a second or third production; the third being supposed the best of all. They bear their young five months; and, by being housed, they bring forth at any time of the year.

But this animal, in its domestic state, is too well known to require a detail of its peculiar habits, or of the arts which have been used to improve the breed. Indeed, in the eye of an observer of nature, every art which tends to render the creature more helpless and useless to itself, may be considered rather as an injury than an improvement; and if we are to look for this animal in its noblest state, we must seek for it in the African desert, or the extensive plains of Siberia. Among the degenerate descendants of the wild sheep, there have been so many changes wrought, as entirely to disguise the kind, and often to mislead the observer. The variety is so great, that scarcely any two countries have their sheep of the same kind; but there is found a manifest difference in all, either in the size, the covering, the shape, or the horns.

The woolly sheep,‡ as it is seen among us, is found only in Europe, and some of the temperate provinces of Asia. When transported into warmer countries, either

* Lisle's Husbandry, vol. ii. p. 155. † Ibid.
‡ Buffon, vol. xxiii. p 168.

into Florida or Guinea, it loses its wool, and assumes a covering fitted to the climate, becoming hairy and rough; it there also loses its fertility, and its flesh no longer has the same flavour. In the same manner, in the very cold countries, it seems equally helpless and a stranger; it still requires the unceasing attention of mankind for its preservation; and although it is found to subsist, as well in Greenland as in Guinea,* yet it seems a natural inhabitant of neither.

Of the domestic kinds to be found in the different parts of the world, besides our own, which is common in Europe, the first variety is to be seen in Iceland, Muscovy, and the coldest climates of the north. This, which may be called the Iceland sheep, resembles our breed in the form of the body and the tail; but differs in a very extraordinary manner in the number of the horns; being generally found to have four, and sometimes even eight, growing from different parts of the forehead. These are large and formidable; and the animal seems thus fitted by nature for a state of war: however, it is of the nature of the rest of its kind, being mild, gentle, and timid. Its wool is very different also from that of the common sheep, being long, smooth, and hairy. Its colour is of a dark brown; and under its outward coat of hair it has an internal covering, that rather resembles fur than wool, being fine, short, and soft.

The second variety to be found in this animal, is that of the broad-tailed sheep, so common in Tartary, Arabia, Persia, Barbary, Syria, and Egypt. This sheep is only remarkable for its large and heavy tail, which is often found to weigh from twenty to thirty pounds. It sometimes grows a foot broad, and is obliged to be supported by a small kind of board, that goes upon wheels. This tail is not covered underneath with wool, like the upper part, but is bare; and the natives, who consider it as a very great delicacy, are very careful in attending and preserving it from injury. Mr. Buffon supposes that the fat which falls into the caul in our sheep, goes in these to furnish the tail; and that the rest of the body is from thence deprived of fat in proportion. With regard to their fleeces, in the temperate climates, they are, as in our

* Krantz.

own breed, soft and woolly; but in the warmer latitudes, they are hairy: yet in both they preserve the enormous size of their tails.

The third observable variety is that of the sheep called *strepsicheros*. This animal is a native of the islands of the Archipelago, and only differs from our sheep, in having straight horns, surrounded with a spiral furrow.

The last variety is that of the Guinea sheep, which is generally found in all the tropical climates, both of Africa and the East Indies. They are of a large size, with a rough hairy skin, short horns, and ears hanging down, with a kind of dewlap under the chin. They differ greatly in form from the rest, and might be considered as animals of another kind, were they not known to breed with other sheep. These, of all the domestic kinds, seem to approach the nearest to the state of nature. They are larger, stronger, and swifter, than the common race; and, consequently, better fitted for a precarious forest life. However, they seem to rely, like the rest, on man for support; being entirely of a domestic nature, and subsisting only in the warmer climates.

Such are the varieties of this animal, which have been reduced into a state of domestic servitude. These are all capable of producing among each other; all the peculiarities of their form have been made by climate and human cultivation; and none of them seem sufficiently independent to live in a state of savage nature. They are, therefore, to be considered as a degenerate race, formed by the hand of man, and propagated merely for his benefit. At the same time, while man thus cultivates the domestic kinds, he drives away and destroys the savage race, which are less beneficial, and more headstrong. These, therefore, are to be found in but a very small number, in the most uncultivated countries, where they have been able to subsist by their native swiftness and strength. It is in the more uncultivated parts of Greece, Sardinia, Corsica, and particularly in the deserts of Tartary, that the moufflon is to be found, that bears all the marks of being the primitive race; and that has been actually known to breed with the domestic animal.

The moufflon, or musmon, though covered with hair, bears a stronger similitude to the ram, than to any other

animal: like the ram, it has the eyes placed near the horns; and its ears are shorter than those of the goat; it also resembles the ram in its horns, and in all the particular contours of its form. The horns also are alike; they are of a yellow colour; they have three sides, as in the ram, and bend backwards in the same manner behind the ears; the muzzle and the inside of the ears, are of a whitish colour, tinctured with yellow; the other parts of the face are of a brownish gray. The general colour of the hair over the body is of a brown, approaching to that of the red deer. The inside of the thighs and the belly are of a white, tinctured with yellow. The form, upon the whole, seems more made for agility and strength than that of the common sheep; and the moufflon is actually found to live in a savage state, and maintain itself, either by force or swiftness, against all the animals that live by rapine. Such is its extreme speed, that many have been inclined rather to rank it among the deer kind, than the sheep. But in this they are deceived, as the musmon has a mark that entirely distinguishes it from that species, being known never to shed its horns. In some these are seen to grow to a surprising size; many of them measuring, in their convolutions, above two ells long. They are of a yellow colour, as was said; but the older the animal grows, the darker the horns become: with these they often maintain very furious battles between each other; and sometimes they are found broken off in such a manner, that the small animals of the forest creep into the cavity for shelter.* When the musmon is seen standing on the plain, his forelegs are always straight, while his hinder legs seem bent under him; but in cases of more active necessity, this seeming deformity is removed, and he moves with great swiftness and agility. The female very much resembles the male of this species, but that she is less, and her horns also are never seen to grow to that prodigious size they are of in the wild ram. Such is the sheep in its savage state; a bold, noble, and even beautiful animal: but it is not the most beautiful creatures that are always found most useful to man. Human industry has therefore destroyed its grace, to improve its utility.

* Gmelin, as quoted by Buffon.



T. Dixon, sculp.

1. DOMESTIC GOAT AND KID. 2. SYRIAN GOAT.
3. ANGORA GOAT.

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THE GOAT,

AND ITS NUMEROUS VARIETIES.

THERE are some domestic animals that seem as auxiliaries to the more useful sorts; and that, by ceasing to be the first, are considered as nothing. We have seen the services of the ass slighted, because inferior to those of the horse; and, in the same manner, those of the goat are held cheap, because the sheep so far exceeds it. Were the horse or the sheep removed from nature, the inferior kinds would then be invaluable; and the same arts would probably be bestowed in perfecting their kinds, that the higher order of animals have experienced. But in their present neglected state, they vary but little from the wild animals of the same kind: man has left them their primitive habits and forms; and the less they owe to his assiduity, the more they receive from nature.

The goat seems, in every respect, more fitted for a life of savage liberty than the sheep.* It is naturally more lively, and more possessed with animal instinct. It easily attaches itself to man, and seems sensible of his caresses. It is also stronger and swifter, more courageous, and more playful, lively, capricious, and vagrant: it is not easily confined to its flock, but chooses its own pastures, and loves to stray remote from the rest. It chiefly delights in climbing precipices, in going to the very edge of danger; it is often seen suspended upon an eminence hanging over the sea, upon a very little base, and even sleeps there in security. Nature has, in some measure, fitted it for traversing these declivities with ease; the hoof is hollow underneath, with sharp edges, so that it walks as securely on the ridge of a house, as on the level ground. It is a hardy animal, and very easily sustained; for which reason it is chiefly the property of the poor, who have no pastures with which to supply it. Happily, however, it seems better pleased with the neglected wild, than the cultivated fields of art; it chooses the heathy mountain, or the shrubby rock; its favourite food is the tops of boughs, or the tender bark of young trees; it seems less afraid of immoderate heat, and bears the warm climates better than

* Buffon.

the sheep; it sleeps exposed to the sun, and seems to enjoy its warmest fervors; neither is it terrified at the storm, or incommoded by the rain; immoderate cold alone seems to affect it, and is said to produce a vertigo, with which this animal is sometimes incommoded. The inconstancy of its nature is perceivable in the irregularity of its gait; it goes forward, stops, runs, approaches, flies, merely from caprice, and with no other seeming reason than the extreme vivacity of its disposition.

There are proofs of this animal's being naturally the friend of man; and that the goat seldom resumes its primeval wildness, when once reduced into a state of servitude. In the year 1698, an English vessel happening to touch at the island of Bonavista, two negroes came, and offered the sailors as many goats as they chose to take away. Upon the captain's expressing his astonishment at this offer, the negroes assured him that there were but twelve persons in the island, and that the goats were multiplied in such a manner as even to become a nuisance: they added, that instead of giving any trouble to catch them, they followed the few inhabitants that were left with a sort of obstinacy, and rather became importunate with their tameness.

The goat produces but two at a time, and three at the most. But in the warmer climates, although the animal degenerates, and grows less, yet it becomes more fruitful, being generally found to bring forth three, four, and five, at a single delivery. The buck is capable of propagating at the age of one year, and the female at seven months; however, the fruits of this premature generation are weak and defective; and their best breeding-time is generally delayed till the age of two years, or eighteen months at least. One buck is sufficient for a hundred and fifty goats; his appetites are excessive: but this ardour brings on a speedy decay, so that he is enervated in four years at most, and even becomes old before he reaches his seventh year. The goat, like the sheep, continues five months with young; and, in some places, bears twice a year.

The milk of the goat is sweet, nourishing, and medicinal; not so apt to curdle upon the stomach as that of the cow; and, therefore, preferable to those whose digestion is but weak. The peculiarity of this animal's food gives

the milk a flavour different from that either of the cow or the sheep; for as it generally feeds upon shrubby pastures, and heathy mountains, there is an agreeable mildness in the taste, very pleasing to such as are fond of that aliment. In several parts of Ireland, and the highlands of Scotland, the goat makes the chief possession of the inhabitants. On those mountains, where no other useful animal could find subsistence, the goat continues to glean a sufficient living, and supplies the hardy natives with what they consider as varied luxury. They lie upon beds made of their skins, which are soft, clean, and wholesome; they live upon their milk, with oat-bread; they convert a part of it into butter, and some into cheese: the flesh, indeed, they seldom taste of, as it is a delicacy which they find too expensive; however, the kid is considered, even by the city epicure, as a great rarity; and the flesh of the goat, when properly prepared, is ranked by some as no way inferior to venison. In this manner, even in the wildest solitudes, the poor find comforts of which the rich do not think it worth their while to dispossess them: in these mountainous retreats, where the landscape presents only a scene of rocks, heaths, and shrubs, that speak the wretchedness of the soil, these simple people have their feasts and their pleasures; their faithful flock of goats attends them to these awful solitudes, and furnishes them with all the necessaries of life; while their remote situation happily keeps them ignorant of greater luxury.

As these animals are apt to stray from the flock, no man can attend above fifty of them at a time. They are fattened in the same manner as sheep; but, taking every precaution, their flesh is never so good or so sweet, in our climate, as that of mutton. It is otherwise between the tropics. The mutton there becomes flabby and lean, while the flesh of the goat rather seems to improve; and in some places the latter is cultivated in preference to the former. We, therefore, find this animal in almost every part of the world, as it seems fitted for the necessities of man in both extremes. Towards the north, where the pasture is coarse and barren, the goat is fitted to find a scanty subsistence; between the tropics, where the heat is excessive, the goat is fitted to bear the climate, and its flesh is found to improve.

One of the most remarkable varieties we find in the goat is in that of Natolia. The Natolian goat, or, as Mr. Buffon calls it, the goat of *Angora*, has the ears longer than ours, and broader in proportion. The male has horns of about the same length with the goat of Europe, but black, and turned very differently, going out horizontally on each side of the head, and twisted round in the manner of a cork-screw. The horns of the female are shorter, and encircle the ear somewhat like those of the ram. They are of a dazzling white colour, and in all the hair is very long, thick, fine, and glossy; which, indeed, is the case with almost all the animals of Syria. There are a great number of these animals about Angora, where the inhabitants drive a trade with their hair, which is sold either raw, or manufactured, into all parts of Europe. Nothing can exceed the beauty of the stuffs which are made from the hair of almost all the animals of that country. These are well known among us by the name of *camlet*.

A second variety is the Assyrian goat, of Gesner, which is somewhat larger than ours, with ears almost hanging down to the ground, and broad in proportion.* The horns, on the contrary, are not above two inches and a half long, black, and bending a little backwards. The hair is of a fox colour, and under the throat there are two excrescences, like the gills of a cock. These animals are chiefly kept round Aleppo for the sake of their milk. They are driven through the streets, and their milk is sold to the inhabitants as they pass along.

In the third variety may be reckoned the little goat of Africa, which is of the size of a kid, but the hair is as long as that of the ordinary breed. The horns, which do not exceed the length of a man's finger, are thick, and bend downwards so close to the head that they almost enter the skin.

There is an animal of this kind at the Cape of Good Hope, called the *blue goat*, which may be ranked as the fourth variety. It is in shape like the domestic, but much larger, being nearly of the size of a stag. Its hair is very short, and of a delightful blue; but it loses a great deal of

* M. Sonini assures us, that though the ears of this variety are much longer than those of the common goat, they never reach so low as the ground, nor, as has been reported, are they ever cropped.

its beauty when the animal is dead. It has a very long beard; but the horns are not so long in proportion as in other goats, being turned spirally, in the manner of a cork-screw. It has very long legs, but well proportioned; and the flesh is very well tasted, but lean. For this reason, in that plentiful country, it is chiefly killed upon account of its skin. It is a very shy animal, and seldom comes near the Dutch settlements; but they are found in great abundance in the more uncultivated parts of the country. Besides these, they are found in this extensive region of various colours, and many of them are spotted beautifully, with red, white, and brown.*

In fine, the Juda goat resembles ours in most parts, except in size, it being much smaller. This animal is common in Guinea, Angola, and all along the coasts of Africa; it is not much larger than a hare, but it is extremely fat, and its flesh admirably tasted. It is in that country universally preferred to mutton.

These animals seem all of one kind, with very trifling distinctions between them. It is true that they differ in some respects; such as having neither the same colour, hair, ears, or horns. But it ought to be considered as a rule in natural history, that neither the horns, the colour, the fineness or the length of the hair, or the position of the ears, are to be considered as making an actual distinction in the kinds. These are accidental varieties, produced by climate and food, which are known to change even in the same animal, and give it a seeming difference of form. When we see the shapes, the inclinations, and the internal conformation, of seemingly different creatures nearly the same; and, above all, when we see them producing among each other, we then have no hesitation in pronouncing the species, and asserting that these are of the goat kind, with which they are so materially connected.

But although these are evidently known to belong to the goat kind, there are others nearly resembling the goat, of whose kindred we cannot be equally certain. These are such as, being found in a state of nature, have not as yet been sufficiently subjected to human observation. Hence

* This species is now known to be of the antelope tribe, and is, by all modern zoological writers, called the blue antelope.

it is impossible to determine with precision to which class they belong; whether they be animals of a particular kind, or merely the goat in its state of savage freedom. Were there but one of these wild animals, the inquiry would soon be ended, and we might readily allow it for the parent stock; but, in the present case, there are two kinds that have almost equal pretensions to this honour; and the claims of which it has been found difficult to determine. The animals in question are the chamois and the ibex. These both bear very near approaches to the goat in figure; have horns that never shed; and, at the same time, are more different from each other than from the animal in question. From which of these two sources our domestic goat is derived is not easy to settle. Instead, therefore, of entering into the discussion, I will content myself with the result of Mr. Buffon's inquiries. He is of opinion that the ibex is the principal source; that our domestic goat is the immediate descendant; and that the chamois is but a variety from that stock, a sort of collateral branch of the same family. His principal reason for giving the preference to the ibex is, its having a more masculine figure, large horns, and a large beard; whereas the chamois, wants these marks of primitive strength and wildness. He supposes, therefore, in their original savage state, that our goat has taken after the male of the parent stock, and the chamois after the female; and that this has produced a variety in these animals, even before they underwent human cultivation.

However this be, the two animals in question seem both well fitted for their precarious life, being extremely swift, and capable of running with ease along the ledges of precipices, where even the wolf or the fox, though instigated by hunger, dares not pursue them. They are both natives of the Alps, the Pyrenees, and the mountains of Greece; there they propagate in vast numbers, and continue to exist in spite of the hunter and every beast of prey that is found incessantly to pursue them.

The ibex resembles the goat in the shape of its body; but differs in the horns, which are much larger. They are bent backward, full of knots; and it is generally asserted that there is a knot added every year. There are some of these found, if we may believe Bellonius, at least two yards long.

The ibex has a large black beard, is of a brown colour, with a thick warm coat of hair. There is a streak of black runs along the top of the back; and the belly and back of the thighs are of a fawn colour.

The chamois,* though a wild animal, is very easily tamed, and docile; and to be found only in rocky and mountainous places. It is about the size of a domestic goat, and resembles one in many respects. It is most agreeably lively, and active beyond expression. The chamois' hair is short, like that of the doe; in spring, it is of an ash colour; in autumn, a dun colour, inclining to black; and in winter, of a blackish brown. This animal is found in great plenty in the mountains of Dauphiny, of Piedmont, Savoy, Switzerland, and Germany. They are peaceful, gentle creatures, and live in society with each other. They are found in flocks of from four to fourscore, and even a hundred, dispersed upon the crags of the mountains. The large males are seen feeding detached from the rest, except in rutting time, when they approach the females, and drive away the young. The time of their coupling is from the beginning of October to the end of November; and they bring forth in March and April. The young keeps with the dam about five months, and sometimes longer, if the hunters and the wolves do not separate them. It is asserted that they live between twenty and thirty years. Their flesh is good to eat; and they are found to have ten or twelve pounds of suet, which far surpasses that of the goat in hardness and goodness. The chamois has scarcely any cry, as most animals are known to have; if it has any, it is a kind of feeble bleat, by which the parent calls its young. But in cases of danger, and when it is to warn the rest of the flock, it uses a hissing noise, which is heard at a great distance. For it is to be observed, that this creature is extremely vigilant, and has an eye the quickest and most piercing in nature. Its smell also is not less distinguishing. When it sees its enemy distinctly, it stops for a moment, and then, if the person be near, in an instant after it flies off. In the same manner, by its smell, it can discover a man at half a league distance, and gives the earliest notice. Upon any alarm, therefore, or any apprehension of danger, the chamois begins his

* M. Peroud's Account as quoted by Buffon.

hissing note with such force, that the rocks and the forests re-echo to the sound. The first hiss continues as long as the time of one inspiration. In the beginning it is very sharp, and deeper towards the close. The animal having, after this first alarm, reposed a moment, again looks round, and, perceiving the reality of its fears, continues to hiss by intervals, until it has spread the alarm to a very great distance. During this time, it seems in the most violent agitation; it strikes the ground with its fore-foot, and sometimes with both; it bounds from rock to rock; it turns and looks round; it runs to the edge of the precipice; and, still perceiving the enemy, flies with all its speed. The hissing of the male is much louder and sharper than that of the female; it is performed through the nose; and is properly no more than a very strong breath driven violently through a small aperture. The chamois feeds upon the best herbage, and chooses the most delicate parts of the plants, the flower, and the tender buds. It is not less delicate with regard to several aromatic herbs which grow upon the sides of the mountains. It drinks but very little while it feeds upon the succulent herbage, and chews the cud in the intervals of feeding. This animal is greatly admired for the beauty of its eyes, which are round and sparkling, and which mark the warmth of its constitution. Its head is furnished with two small horns, of about half a foot long, of a beautiful black, and rising from the forehead, almost betwixt the eyes. These, contrary to what they are found in other animals, instead of going backwards or sideways, jet out forward, and bend a little, at their extremities, backward, in a small circle, and end in a very sharp point. The ears are placed, in a very elegant manner, near the horns; and there are two stripes of black on each side of the face, the rest being of a whitish yellow, which never changes. The horn of this animal is often used as the head of a cane. Those of the female are less, and not so much bent; and some farriers are seen to bleed cattle with them. These animals are so much incommoded by heat, that they are never found in summer, except in the caverns of rocks, amidst fragments of unmelted ice, under the shade of high and spreading trees, or of rough and hanging precipices, that face the north, and which keep off entirely the rays of the sun. They go to pasture both

morning and evening, and seldom during the heat of the day. They run along the rocks with great ease and seeming indifference, and leap from one to another, so that no dogs are able to pursue them. There is nothing more extraordinary than to see them climbing and descending precipices, that to all other quadrupeds are inaccessible. They always mount or descend in an oblique direction; and throw themselves down a rock of thirty feet, and light with great security upon some excrescence or fragment, on the side of the precipice, which is just large enough to place their feet upon; they strike the rock, however, in their descent, with their feet, three or four times, to stop the velocity of their motion; and, when they have got upon their base below, they at once seem fixed and secure. In fact, to see them jump in this manner, they seem rather to have wings than legs: some, indeed, pretend to say, that they use their horns for climbing; but this wants confirmation. Certain it is that their legs alone are formed for this arduous employment, the hinder being rather longer than the former, and bending in such a manner, that when they descend upon them, they break the force of the fall. It is also asserted, that when they feed, one of them always stands as centinel; but how far this may be true is questionable. For certain, while they feed, there are some of them that keep continually gazing round the rest; but this is practised among all gregarious animals; so that when they see any danger, they warn the rest of the herd of its approach. During the rigours of winter, the chamois sleeps in the thicker forests, and feeds upon the shrubs and the buds of the pine-tree. It sometimes turns up the snow with its foot to look for herbage, and, where it is green, makes a delicious repast. The more craggy and uneven the forest, the more this animal is pleased with the abode, which thus adds to its security. The hunting the chamois is very laborious, and extremely difficult. The most usual way is to hide behind the clefts of the rocks, and shoot them. This, however, must be done with great precaution; the sportsman must creep for a vast way upon his belly in silence, and take also the advantage of the wind, which if it blow from him they would instantly perceive. When arrived at a proper distance, he then advances his piece, which

is to be rifle-barrelled, and to carry one ball, and tries his fortune among them. Some also pursue this animal, as they do the stag, by placing proper persons at all the passages of a glade or valley, and then sending in others to rouse the game. Dogs are quite useless in this chase, as they rather alarm than overtake. Nor is it without danger even to the men; for it often happens that when the animal finds itself overpressed, it drives at the hunter with its head, and often tumbles him down the neighbouring precipice. This animal cannot go upon ice when smooth; but if there be the least inequalities on its surface, it then bounds along in security, and quickly evades all pursuit.

The skin of the chamois was once famous, when tanned, for its softness and warmth; at present, however, since the art of tanning has been brought to greater perfection, the leather called *shammoy* is made also from those of the tame goat, the sheep, and the deer. Many medicinal virtues also were said to reside in the blood, fat, gall, and the concretion sometimes found in the stomach of this animal, called the *German bezoar*. The fat, mixed with milk, was said to be good in ulcers, of the lungs. The gall was said to be useful in strengthening the sight; the stone, which is generally about the size of a walnut, and blackish, was formerly in great request for having the same virtues with oriental bezoar. However, in the present enlightened state of physic, all these medicines are quite out of repute; and although we have the names of several medicines procurable from quadrupeds, yet, except the musk or hartshorn alone, I know of none in any degree of reputation. It is true, the fat, the urine, the beak, and even the dung of various animals, may be found efficacious, where better remedies are not to be had; but they are far surpassed by many at present in use, whose operations we know, and whose virtues are confirmed by repeated experience.

Such are the quadrupeds that more peculiarly belong to the goat kind. Each of these, in all probability, can engender and breed with the other; and were the whole race extinguished, except any two, these would be sufficient to replenish the world, and continue the kind. Nature, however, proceds in her variations by slow and insensible

degrees, and scarcely draws a firm distinguished line between any two neighbouring races of animals whatsoever. Thus it is hard to discover where the sheep ends, and the goat begins; and we shall find it still harder to fix precisely the boundaries between the goat kind and the deer. In all transitions from one kind to the other, there are to be found a middle race of animals, that seem to partake of the nature of both, and that can precisely be referred to neither. That race of quadrupeds, called the *gazelles*, are of this kind; they are properly neither goat nor deer, and yet they have many of the marks of both; they make the shade between these two kinds, and fill up the chasm in nature.

THE GAZELLES.

The Gazelles, of which there are several kinds, can, with propriety, be referred neither to the goat or the deer, and yet they partake of both natures. Like the goat, they have hollow horns that never fall, which is otherwise in the deer. They have a gall-bladder which is found in the goat, and not in the deer; and, like that animal, they feed rather upon shrubs than grassy pastures. On the other hand, they resemble the roebuck in size and delicacy of form; they have deep pits under the eyes like that animal; they resemble the roebuck in the colour and nature of their hair; they resemble him in the bunches upon their legs, which only differ in being upon the fore-legs in these, and on the hind legs in the other. They seem, therefore, to be of a middle nature between these two kinds; or, to speak with greater truth and precision, they form a distinct kind by themselves.

The distinguishing marks of this tribe of animals, by which they differ both from the goat and the deer are these; their horns are made differently, being annulated or ringed round, at the same time that there are longitudinal depressions running from the bottom to the point. They have bunches of hair upon their fore-legs; they have a streak of black, red, or brown, running along the lower part of their sides, and three streaks of whitish hair in the internal side of the ear. These are characters that none of them are without;

besides these, there are others which, in general, they are found to have, and which are more obvious to the beholder. Of all animals in the world, the gazelle has the most beautiful eye, extremely brilliant, and yet so meek, that all the eastern poets compare the eyes of their mistresses to those of this animal. A gazelle-eyed beauty is considered as the highest compliment that a lover can pay; and, indeed, the Greeks themselves thought it no inelegant piece of flattery to resemble the eyes of a beautiful woman to those of a cow. The gazelle, for the most part, is more delicately and finely limbed than even the roebuck; its hair is as short, but finer, and more glossy. Its hinder legs are longer than those before, as in the hare, which gives it greater security in ascending or descending steep places. Their swiftness is equal, if not superior, to that of the roe; but as the latter bounds forward, so these run along in an even uninterrupted course. Most of them are brown upon the back, white under the belly, with a black stripe separating those colours between. Their tail is of various lengths, but in all covered with pretty long hair; and their ears are beautiful, well placed, and terminating in a point. They all have a cloven hoof, like the sheep; they all have permanent horns; and the female has them smaller than the male.

Of these animals Mr. Buffon makes twelve varieties; which, however, is much fewer than what other naturalists have made them. The first is the *gazella*, properly so called, which is of the size of the roebuck, and very much resembling it in all the proportions of its body, but entirely differing, as was said, in the nature and fashion of the horns, which are black and hollow, like those of the ram or the goat, and never fall. The second he calls the *kevel*, which is rather less than the former; its eyes also seem larger; and its horns, instead of being round, are flatted on the sides, as well in the male as the female. The third he calls the *corin*, which very much resembles the two former, but that it is still less than either. Its horns also are smaller in proportion, smoother than those of the other two, and the annular prominences belonging to the kind are scarcely discernible, and may rather be called wrinkles than prominences. Some of these animals are often seen streaked like the tiger. These three are sup-

posed to be of the same species. The fourth he calls the *zeiran*, the horns only of which he has seen; which, from their size, and the description of travellers, he supposes to belong to a larger kind of the gazelle, found in India and Persia, under that denomination.

The fifth he calls the *koba*, and the sixth the *kob*; these two differ from each other only in size, the former being much larger than the latter. The muzzle of these animals is much longer than those of the ordinary gazelle; the head is differently shaped, and they have no depressions under the eyes. The seventh he calls after its Egyptian name, the *algazel*; which is shaped pretty much like the ordinary gazelle, except that the horns are much longer, being generally three feet from the point to the insertion; whereas, in the common gazelle, they are not above a foot; they are smaller also, and straighter, till near the extremities, when they turn short, with a very sharp flexure; they are black and smooth, and the annular prominences are scarcely observable. The eighth is called the *pasan*; or, by some, the *bezoar goat*, which greatly resembles the former, except a small variety in their horns; and also with this difference, that as the algazel feeds upon the plains, this is only found in the mountains. They are both inhabitants of the same countries and climate; being found in Egypt, Arabia, and Persia. This last is the animal famous for that concretion in the intestines or stomach, called the *oriental bezoar*, which was once in such repute all over the world for its medicinal virtues. The word *bezoar* is supposed to take its name either from the pazan or pazar, which is the animal that produces it; or from a word in the Arabic language, which signifies *antidote* or *counter-poison*. It is a stone of a glazed blackish colour, found in the stomach or the intestines of some animal, and brought over to us from the East-Indies. Like all other animal concretions, it is found to have a kind of nucleus, or hard substance within, upon which the external coatings were formed; for, upon being sawed through, it is seen to have layer over layer, as in an onion. This nucleus is of various kinds; sometimes the buds of a shrub, sometimes a piece of stone, and sometimes a marcasite. This stone is from the size of an acorn to that of a pigeon's egg; the larger the stone, the more valuable it is held;

its price increasing, like that of a diamond. There was a time when a stone of four ounces sold in Europe for above two hundred pounds; but at present the price is greatly fallen, and they are in very little esteem. The bezoar is of various colours; sometimes of a blood colour, sometimes of a pale yellow, and of all the shades between these two. It is generally glossy, smooth, and has a fragrant smell, like that of ambergris, probably arising from the aromatic vegetables upon which the animal that produces it feeds. It has been given in vertigoes, epilepsies, palpitations of the heart, colic, and jaundice; and in those places, where the dearness and not the value of medicines is consulted, in almost every disorder incident to man. In all, perhaps, it is equally efficacious, acting only as an absorbent powder, and possessing virtues equal to common chalk, or crabs-claws. Judicious physicians have therefore discarded it; and this celebrated medicine is now chiefly consumed in countries where the knowledge of nature has been but little advanced. When this medicine was in its highest reputation, many arts were used to adulterate it; and many countries endeavoured to find out a bezoar of their own. Thus we had occidental bezoar, brought from America; German bezoar, which has been mentioned before; cow bezoar; and monkey bezoar. In fact, there is scarcely an animal, except of the carnivorous kinds, that does not produce some of these concretions in the stomach, intestines, kidneys, bladder, and even in the heart. To these ignorance may impute virtues that they do not possess; experience has found but few cures performed by their efficacy: but it is well known, that they often prove fatal to the animal that bears them. These concretions are generally found in cows, by their practice of licking off their hair, which gathers in the stomach into the shape of a ball, acquires a surprising degree of hardness, and sometimes a polish like leather. They are often as large as a goose-egg; and when become too large to pass, block up the passage of the food, and the animal dies. The substance of these balls, however, is different from the bezoar mentioned above; being rather a concretion of hair than of stone. There is a bezoar found in the gall-bladder of a boar, and thence called *hog bezoar*, in very great esteem; but perhaps with as little justice as any of the former. In

short, as we have already observed, there is scarcely an animal, or scarcely a part of their bodies, in which concretions are not formed; and it is more than probable, as Mr. Buffon justly remarks, that the bezoar so much in use formerly, was not the production of the pazar, or any one animal only, but that of the whole gazelle kind; who feeding upon odoriferous herbs and plants, gave this admirable fragrance to the accidental concretions which they were found to produce. As this medicine, however, is but little used at present, our curiosity is much abated as to the cause of its formation. To return, therefore, to the varieties in the gazelle tribe, the ninth is called the *ranguer*, and is a native of Senegal. This differs somewhat in shape and colour from the rest; but particularly in the shape of its horns, which are straight to near the points, where they crook forward, pretty much in the same manner as in the chamois they crook backward. The tenth variety of the gazelle is the *antelope*, so well known to the English, who have given it the name. This animal is of the size of a roe-buck, and resembles the gazelle in many particulars, but differs in others: it has deeper eye-pits than the former; the horns are formed differently also, being about sixteen inches long, almost touching each other at the bottom, and spreading as they rise, so as at their tips to be sixteen inches asunder. They have the annular prominences of their kind, but not so distinguishable as in the gazelle: however, they have a double flexure, which is very remarkable, and serves to distinguish them from all others of their kind. At the root they have a tuft of hair, which is longer than that of any part of the body. Like others of the same kind, the antelope is brown on the back, and white under the belly; but these colours are not separated by the black streak which is to be found in all the rest of the gazelle kinds. There are different sorts of this animal, some with larger horns than others, and others with less. The one which makes the eleventh variety in the gazelle kind, Mr. Buffon calls the *lidme*, which has very long horns; and the other, which is the twelfth and last, he calls the *Indian antelope*, the horns of which are very small.

To these may be added three or four varieties more, which it is not easy to tell whether to refer to the goat or the gazelle, as they equally resemble both. The first of these

is the *bubalus*, an animal that seems to partake of the mixed natures of the cow, the goat, and the deer. It resembles the stag in the size and the figure of its body, and particularly in the shape of its legs. But it has permanent horns, like the goat; and made entirely like those of the gazelle kind. It also resembles that animal in its way of living; however, it differs in the make of its head, being exactly like the cow in the length of its muzzle, and in the disposition of the bones of its skull; from which similitude it has taken its name. This animal has a narrow long head; the eyes are placed very high; the forehead short and narrow; the horns permanent, about a foot long, black, thick, annulated, and the rings of the gazelle kind, remarkably large; its shoulders are very high, and it has a kind of bunch on them, that terminates at the neck; the tail is about a foot long, and tufted with hair at the extremity. The hair of this animal is remarkable in being thicker at the middle than at the root: in all other quadrupeds, except the elk and this, the hair tapers off from the bottom to the point; but in these, each hair seems to swell in the middle, like a nine-pin. The bubalus also resembles the elk in size, and the colour of its skin; but these are the only similitudes between them; as the one has a very large branching head of solid horns that are annually deciduous, the other has black, unbranching, hollow horns, that never fall. The bubalus is common enough in Barbary, and has often been called by the name of the *Barbary cow*, from which animal it differs so widely. It partakes pretty much of the nature of the antelope; like that, having the hair short, the hide black, the ears pointed, and the flesh good for food.

The second anomalous animal of the goat-kind, Mr. Buffon calls the *condoma*. It is supposed to be equal in size to the largest stag, but with hollow horns, like those of the goat kind, and with varied flexures, like those of the antelope. They are above three feet long; and at their extremities about two feet asunder. All along the back there runs a white list, which ends at the insertion of the tail; another of the same colour crosses this, at the bottom of the neck, which it entirely surrounds; there are two more of the same kind running round the body, one behind the fore-legs, and the other running parallel to it before the hinder. The colour of the rest of the body is grayish, except

the belly, which is white: it has also a long gray beard; and its legs, though long, are well proportioned.

The third that may be mentioned, he calls the *guiba*. It resembles the gazelles in every particular, except in the colour of the belly, which, as we have seen, is white in them, but in this is of a deep brown. Its horns also are not marked with annular prominences, but are smooth and polished. It is also remarkable for white lists, on a brown ground, that are disposed along the animal's body, as if it were covered with harness. Like the former it is a native of Africa.

The *African wild goat* of Grimmius is the fourth. It is of a dark ash-colour; and in the middle of the head is a hairy tuft, standing upright; on both sides, between the eyes, and the nose, there are very deep cavities, greater than those of the other kinds, which contain a yellow oily liquor, coagulating into a black substance, that has a smell between musk and civet. This being taken away, the liquor again runs out, and coagulates, as before. These cavities have no communication with the eyes, and, consequently, this oozing substance can have nothing of the nature of tears.

To this we may add the *chevrotin*, or little Guinea deer, which is the least of all cloven-footed quadrupeds, and perhaps the most beautiful; its legs, at the smallest part, are not much thicker than the shank of a tobacco-pipe; it is about seven inches high, and about twelve from the point of the nose to the insertion of the tail. It is the most delicately shaped animal in the world, being completely formed like a stag in miniature; except that its horns, when it has any, are more of the gazelle kind, being hollow and annulated in the same manner. It has two canine teeth in the upper jaw; in which respect it differs from all other animals of the goat or deer kind, and thus makes a species entirely distinct by itself. This wonderful animal's colour is not less pleasing; the hair, which is short and glossy, being in some of a beautiful yellow, except on the neck and belly, which is white. They are natives of India, Guinea, and the warm climates between the tropics, and are found in great plenty. But though they are amazingly swift for their size, yet the negroes often overtake them in the pursuit, and knock them down with their sticks. They may be easily tamed, and then they become familiar and pleasing; but they are of such

delicate constitutions, that they can bear no climate but the hottest; and they always perish with the rigours of ours, when they are brought over. The male in Guinea has horns: the female is without any; as are all the kinds of this animal, to be found either in Java or Ceylon, where they chiefly abound.*

Such is the list of the gazelles; all which pretty nearly resemble the deer in form and delicacy of shape; but have the horns hollow, single, and permanent, like those of the goat. They properly fill up, as has been already observed, the interval between these two kinds of animals; so that it is difficult to tell where the goat ends, and the deer may be said to begin. If we compare the gazelles with each other, we shall find but very slight distinctions between them. The turn or the magnitude of the horns, the different spots on the skin, or a difference of size in each, are chiefly the marks by which their varieties are to be known; but their way of living, their nature, and their peculiar swiftness, all come under one description.

The gazelles are, in general, inhabitants of the warmer climates; and contribute, among other embellishments, to add beauty to those forests that are for ever green. They are often seen feeding in herds, on the sides of the mountains, or in the shade of the woods; and fly all together, upon the smallest approaches of danger. They bound with such swiftness, and are so very shy, that dogs or men vainly attempt to pursue them. They traverse those precipices with ease and safety, which to every quadruped else are quite impracticable; nor can any animals but of the winged kind overtake them. Accordingly, in all those countries where they are chiefly found, they are pursued by falcons; and this admirable manner of hunting makes

* The author has here confounded together two animals very distinct in their formation and manners; the pigmy antelope, and the pigmy musk. The former is a native of the hottest parts of Africa, and, like all others of its tribe, is furnished with horns, and wants the canine teeth. It is in height about nine inches, and is said to be so active, as to be able to leap over a wall twelve feet high. Its general colour is a bright bay; the horns are straight, short, strong, pointed, and quite black; the legs are hardly thicker than a quill. The pigmy musk is a native of many parts of the East Indies. It has no horns, and in the upper jaw there are a pair of projecting tusks or canine teeth; and it has no appendicular or false hoofs. In size it is smaller than a domestic cat, and its general colour is a bright bay.

one of the principal amusements of the upper ranks of people all over the East. The Arabians, Persians, and Turks, breed up for this purpose that kind of hawk called the *falcon gentle*, with which, when properly trained, they go forth on horseback among the forests and the mountains, the falcon perching upon the hand of the hunter. Their expedition is conducted with profound silence; their dogs are taught to hang behind; while the men, on the fleetest coursers, look round for the game. Whenever they spy a gazelle at the proper distance, they point the falcon to its object, and encourage it to pursue. The falcon, with the swiftness of an arrow, flies to the animal, that, knowing its danger, endeavours, but too late, to escape. The falcon soon coming up with its prey, fixes its talons, one into the animal's cheek, the other in its throat, and deeply wounds it. On the other hand, the gazelle attempts to escape, but is generally wounded too deeply to run far. The falcon clings with the utmost perseverance, nor ever leaves its prey till it falls; upon which the hunters from behind approaching, take up both, and reward the falcon with the blood of the spoil. They also teach the young ones, by applying them to the dead animal's throat, and accustoming them betimes to fix upon that particular part; for if it should happen that the falcon fixed upon any other part of the gazelle, either its back or its haunches, the animal would easily escape among the mountains, and the hunter would also lose his falcon.—They sometimes also hunt these animals with the ounce. This carnivorous and fierce creature being made tame and domestic, generally sits on horseback behind the hunter, and remains there with the utmost composure, until the gazelle is shewn; it is then that it exerts all its arts and fierceness; it does not at once fly at its prey, but approaches slily, turning and winding about until it comes within the proper distance, when all at once it bounds upon the heedless animal, and instantly kills it, and sucks its blood. If, on the other hand, it misses its aim, it rests in its place, without attempting to pursue any farther, but seems ashamed of its own inability.

There is still another way of taking the gazelle, which seems not so certain nor so amusing as either of the former. A tame gazelle is bred up for this purpose, who is taught to join those of its kind, wherever it perceives

them. When the hunter, therefore, perceives a herd of these together, he fixes a noose round the horns of the tame gazelle, in such a manner, that if the rest but touch it they are entangled; and thus prepared, he sends his gazelle among the rest. The tame animal no sooner approaches, but the males of the herd instantly sally forth to oppose him; and, in butting with their horns, are caught in the noose. In this both, struggling for some time, fall together to the ground; and, at last, the hunter coming up, disengages the one, and kills the other. Upon the whole, however, these animals, whatever be the arts used to pursue them, are very difficult to be taken. As they are continually subject to alarms from carnivorous beasts, or from man, they keep chiefly in the most solitary and inaccessible places, and find their only protection from situations of the greatest danger.

CHAP. IV.

OF THE MUSK ANIMAL.

The more we search into nature, the more we shall find how little she is known; and we shall more than once have occasion to find, that protracted inquiry is more apt to teach us modesty, than to produce information. Although the number and nature of quadrupeds at first glance seems very well known; yet, when we come to examine closer, we find some with which we are very partially acquainted, and others that are utterly unknown. There is scarcely a cabinet of the curious but what has the spoils of animals, or the horns or the hoofs of quadrupeds, which do not come within former descriptions. There is scarcely a person whose trade is to dress or improve furs, but knows several creatures by their skins, which no naturalist has hitherto had notice of. But of all quadrupeds, there is none so justly the reproach of natural historians, as that which bears the musk. This perfume, so well known to the elegant, and so very useful in the hands of the physician, a medicine that has for more than a century been imported from the East in great quantities, and during all that time has been

improving in its reputation, is, nevertheless, so very little understood, that it remains a doubt whether the animal that produces it be a hog, an ox, a goat, or a deer. When an animal with which we are so nearly connected, is so utterly unknown, how little must we know of many that are more remote and unserviceable! Yet naturalists proceed in the same train, enlarging their catalogues and their names, without endeavouring to find out the nature, and fix the precise history, of those with which we are very partially acquainted. It is the spirit of the scholars of the present age to be fonder of increasing the bulk of our knowledge, than its utility; of extending their conquests, than of improving their empire.

The musk which comes to Europe, is brought over in small bags, about the size of a pigeon's egg, which, when cut open, appear to contain a kind of dusky reddish substance, like coagulated blood, and which, in large quantities, has a very strong smell; but, when mixed and diffused, becomes a very agreeable perfume. Indeed, no substance now known in the world has a stronger or a more permanent smell. A grain of musk perfumes a whole room; and its odour continues for some days without diminution. But in a larger quantity it continues for years together, and seems scarcely wasted in its weight, although it has filled the atmosphere to a great distance with its parts. It is particularly used in medicine, in nervous and hysteric disorders; and is found in such cases to be the most powerful remedy now in use: however, the animal that furnishes this admirable medicine has been very variously described, and is known but very imperfectly.

The description given of this animal by Grew is as follows: "The musk animal is properly neither of the goat nor deer kind, for it has no horns, and it is uncertain whether it ruminates or not; however, it wants the fore-teeth in the upper jaw, in the same manner as in ruminating animals; but, at the same time, it has tusks like those of a hog. It is three feet six inches in length, from the head to the tail; and the head is above half a foot long. The fore-part of the head is like that of a greyhound; and the ears are three inches long, and erect, like those of a rabbit; but the tail is not above two inches. It is cloven-footed, like beasts of the goat kind; the hair on the head and legs

is half an inch long, on the belly an inch and a half, and on the back and buttocks three inches, and proportionably thicker than in any other animal. It is brown and white alternately, from the root to the point; on the head and thighs it is brown, but under the belly and tail white, and a little curled, especially on the back and belly. On each side of the lower jaw, under the corners of the mouth, there is a tuft of thick hair, which is short and hard, and about three quarters of an inch long. The hair, in general, of this animal, is remarkable for its softness and fine texture; but what distinguishes it particularly are the tusks, which are an inch and a half long, and turn back in the form of a hook; and more particularly the bag which contains the musk, which is three inches long, two broad, and stands out from the belly an inch and a half. It is a very fearful animal, and therefore it has long ears, and the sense of hearing is so quick, that it can discover an enemy at a great distance."

After so long and circumstantial a description of this animal, its nature is but very little known; nor has any anatomist as yet examined its internal structure, or been able to inform us whether it be a ruminant animal, or one of the hog kind; how the musk is formed, or whether those bags in which it comes to us be really belonging to the animal, or are only the sophistications of the venders. Indeed, when we consider the immense quantities of this substance which are consumed in Europe alone, not to mention the East, where it is in still greater repute than here, we can hardly suppose that any one animal can furnish the supply; and particularly when it must be killed before the bag can be obtained. We are told, it is true, that the musk is often deposited by the animal upon trees and stones, against which it rubs itself when the quantity becomes uneasy; but it is not in that form which we receive it, but always in what seems to be its own natural bladder. Of these, Taverner brought home near two thousand in one year; and, as the animal is wild, so many must, during that space, have been hunted and taken. But as the creature is represented very shy, and as it is found but in some particular provinces of the east, the wonder is, how its bag should be so cheap, and furnished in such great plenty. The bag in common does not cost (if I do not forget) above a crown, by retail, and yet this is sup-



T. Dixon sc.

1. GAZALLE. 2. REIN DEER. 3. STAG. 4. ELK.

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posed the only one belonging to the animal; and for the obtaining of which, it must have been hunted and killed. The only way of solving this difficulty, is to suppose that these bags are, in a great measure, counterfeit, taken from some other animal, or from some part of the same, filled with its blood, and a very little of the perfume, but enough to impregnate the rest with a strong and permanent odour. It comes to us from different parts of the East; from China, Tonquin, Bengal, and often from Muscovy: that of Thibet is reckoned the best, and sells for fourteen shillings an ounce; that of Muscovy the worst, and sells but for three; the odour of this, though very strong at first, being quickly found to evaporate. Musk was some years ago in the highest request as a perfume, and but little regarded as a medicine; but at present its reputation is totally changed: and having been found of great benefit in physic, it is but little regarded for the purposes of elegance. It is thus that things which become necessary, cease to continue pleasing; and the consciousness of their use, destroys their power of administering delight.

CHAP. V.

ANIMALS OF THE DEER KIND.*

If we compare the stag and the bull, as to shape and form, no two animals can be more unlike; and yet, if we examine their internal structure, we shall find a striking similitude between them. Indeed, their differences, except to a nice observer, will scarcely be perceivable. All of the deer kind want the gall-bladder; their kidneys are formed differently; their spleen is also proportionably larger; their tail is shorter; and their horns, which are solid, are renewed

* The quadrupeds of this tribe have horns which are solid and branched: they are renewed every year, and when young are clothed with a fine velvety vascular skin, which falls off when the horns have attained their full size. In the lower jaw they have eight front teeth; and are generally destitute of canine teeth: but sometimes a single one is found on each side in the upper jaw. There are about fourteen distinct species. They are all extremely active, inhabiting chiefly woods and neglected situations; and in fighting not only make use of their horns, but stamp furiously with the fore-feet.

every year. Such are the slight internal discriminations between two animals, one of which is among the swiftest, and the other the heaviest of the brute creation.

The stag is one of those innocent and peaceable animals that seem made to embellish the forest, and animate the solitudes of nature. The easy elegance of his form, the lightness of his motions, those large branches that seem made rather for the ornament of his head than its defence, the size, the strength, and the swiftness, of this beautiful creature, all sufficiently rank him among the first of quadrupeds, among the most noted objects of human curiosity.

The stag, or hart, whose female is called a *hind*, and the young a *calf*, differs in size and in horns from a fallow-deer. He is much larger, and his horns are round; whereas in the fallow-kind they are broad and palmated. By these the animal's age is known. The first year the stag has no horns, but a horny excrescence, which is short, rough, and covered with a thin hairy skin. The next year the horns are single and straight: the third year they have two antlers, three the fourth, four the fifth, and five the sixth; this number is not always certain, for sometimes there are more, and often less. When arrived at the sixth year, the antlers do not always increase; and although the number may amount to six or seven on each side, yet the animal's age is then estimated rather from the size of the antlers, and the thickness of the branch which sustains them, than from their variety. These horns, large as they seem, are, notwithstanding, shed every year, and new ones come in their place. The old horns are of a firm solid texture, and usually employed in making handles for knives and other domestic utensils. But, while young, nothing can be more soft or tender; and the animal, as if conscious of his own imbecility at those times, instantly upon shedding his former horns retires from the rest of his fellows, and hides himself in solitudes and thickets, never venturing out to pasture, except by night. During this time, which most usually happens in the spring, the new horns are very painful, and have a quick sensibility of any external impression. The flies also are extremely troublesome to him. When the old horn is fallen off, the new does not begin immediately to appear; but the bones of the skull are seen covered only with a transparent

periosteum or skin, which, as anatomists teach us, covers the bones of all animals. After a short time, however, this skin begins to swell, and to form a soft tumor, which contains a great deal of blood, and which begins to be covered with a downy substance that has the feel of velvet, and appears nearly of the same colour with the rest of the animal's hair. This tumor every day buds forward from the point like the graft of a tree; and, rising by degrees from the head, shoots out the antlers on either side, so that in a few days, in proportion as the animal is in condition, the whole head is completed. However, as was said above, in the beginning its consistence is very soft, and has a sort of bark, which is no more than a continuation of the integument of the skull. It is velveted and downy, and every where furnished with blood-vessels, that supply the growing horns with nourishment. As they creep along the sides of the branches, the print is marked over the whole surface; and the larger the blood-vessels, the deeper these marks are found to be: from hence arises the inequality of the surface of the deer's horns; which, as we see, are furrowed all along the sides, the impressions diminishing towards the point, where the substance is as smooth and as solid as ivory. But it ought to be observed, that this substance, of which the horns are composed, begins to harden at the bottom, while the upper part remains soft, and still continues growing: from whence it appears that the horns grow differently in deer from those of sheep or cows; in which they are always seen to increase from the bottom. However, when the whole head has received its full growth, the extremities then begin to acquire their solidity; the velvet covering, or bark, with its blood-vessels, dry up, and then begin to fall; and this the animal hastens, by rubbing its antlers against every tree it meets. In this manner, the whole external surface being stripped off by degrees, at length the whole head acquires its complete hardness, expansion, and beauty.

It would be a vain task to inquire into the cause of the animal production of these horns; it is sufficient to observe, that if a stag be castrated when its horns are fallen off, they will never grow again; and, on the contrary, if the same operation is performed when they are on, they will never fall off. If only one of his testicles is taken

out, he will want the horn on that side; if one of the testicles only be tied up, he will want the horn of the opposite side. The increase of their provision also tends to facilitate the growth and the expansion of the horns; and Mr. Buffon thinks it possible to retard their growth entirely by greatly retrenching their food.* As a proof of this, nothing can be more obvious than the difference between a stag bred in fertile pastures, and undisturbed by the hunter, and one often pursued and ill nourished. The former has his head expanded, his antlers numerous, and the branches thick; the latter has but few antlers, the traces of the blood-vessels upon them are but slight, and the expansion but little. The beauty and size of their horns, therefore, mark their strength and their vigour: such of them as are sickly, or have been wounded, never shooting out that magnificent profusion so much admired in this animal. Thus the horns may, in every respect, be resembled to a vegetable substance, grafted upon the head of an animal. Like a vegetable, they grow from the extremities; like a vegetable, they are for a while covered with a bark that nourishes them; like a vegetable, they have their annual production and decay; and a strong imagination might suppose that the leafy productions on which the animal feeds, go once more to vegetate in his horns.†

The stag is usually a twelvemonth old before the horns begin to appear, and then a single branch is all that is seen for the year ensuing. About the beginning of spring, all of this kind are seen to shed their horns, which fall off of themselves; though sometimes the animal assists the efforts of nature, by rubbing them against a tree. It seldom happens that the branches on both sides fall off at the same time, there often being two or three days between the dropping of the one and the other. The old stags usually shed their horns first; which generally happens towards the latter end of February, or the beginning of March. Those of the second head, (namely, such as are between five and six years old,) shed their horns about the middle or latter end of March; those still younger, in the month of April; and the youngest of all, not till the middle, or the latter end of May; they generally shed

* Buffon, vol. xi. p. 113.

† Mr. Buffon has supposed something like this. Vide passim

them in pools of water, whither they retire from the heat; and this has given rise to the opinion of their always hiding their horns. These rules, though true in general, are yet subject to many variations; and universally it is known, that a severe winter retards the shedding of the horns. The horns of the stag generally increase in thickness and in height from the second year of its age to the eighth. In this state of perfection they continue during the vigour of life; but as the animal grows old the horns feel the impressions of age, and shrink like the rest of the body. No branch bears more than twenty or twenty-two antlers, even in the highest state of vigour; and the number is subject to great variety; for it happens that the stag at one year has either less or more than the year preceding, in proportion to the goodness of his pasture, or the continuance of his security, as these animals seldom thrive when often roused by the hunters. The horns are also found to partake of the nature of the soil: in the more fertile pastures they are large and tender; on the contrary, in the barren soil, they are hard, stunted, and brittle. As soon as the stags have shed their horns, they separate from each other, and seek the plainer parts of the country, remote from every other animal, which they are utterly unable to oppose. They then walk with their heads stooping down, to keep their horns from striking against the branches of the trees above. In this state of imbecility they continue near three months, before their heads have acquired their full growth and solidity; and then, by rubbing them against the branches of every thicket, they at length clear them of the skin which had contributed to their growth and nourishment. It is said by some, that the horn takes the colour of the sap of the tree against which it is rubbed; and that some thus become red, when rubbed against the heath; and others brown, by rubbing against the oak: this, however, is a mistake; since stags kept in parks where there are no trees, have a variety in the colour of their horns, which can be ascribed to nothing but nature. A short time after they have furnished their horns, they begin to feel the impressions of the rut, or the desire of copulation. The old ones are the most forward; and about the end of August, or the beginning of September, they quit their

thickets, and return to the mountain in order to seek the hind, to whom they call with a loud tremulous note. At this time their neck is swoln; they appear bold and furious; fly from country to country; strike with their horns against the trees and other obstacles, and continue restless and fierce until they have found the female; who at first flies from them, but is at last compelled and overtaken. When two stags contend for the same female, how timorous soever they may appear at other times, they then seem agitated with an uncommon degree of ardour. They paw up the earth, menace each other with their horns, bellow with all their force, and striking in a desperate manner against each other, seem determined upon death or victory. This combat continues till one of them is defeated or flies; and it often happens that the victor is obliged to fight several of those battles before it remains undisputed master of the field. The old ones are generally the conquerors upon these occasions, as they have more strength and greater courage; and these also are preferred by the hind to the young ones, as the latter are more feeble, and less ardent. However, they are all equally inconstant, keeping to the female but a few days, and then seeking out for another, not to be enjoyed, perhaps, without a repetition of their former danger.

In this manner the stag continues to range from one to the other for about three weeks, the time the rut continues; during which he scarcely eats, sleeps, or rests, but continues to pursue, to combat, and to enjoy. At the end of this period of madness, for such in this animal it seems to be, the creature that was before fat, sleek, and glossy, becomes lean, feeble, and timid. He then retires from the herd to seek plenty and repose; he frequents the side of the forest, and chooses the most nourishing pastures, remaining there till his strength is renewed. Thus is his whole life passed in the alternations of plenty and want, of corpulence and inanition, of health and sickness, without having his constitution much affected by the violence of the change. As he is above five years coming to perfection, he lives about forty years; and it is a general rule, that every animal lives about seven or eight times the number of years which it continues to grow. What, therefore, is reported concerning the life of this animal,

has arisen from the credulity of ignorance: some say, that a stag having been taken in France, with a collar, on which were written these words, "Cæsar, hoc me donavit;" this was interpreted of Julius Cæsar; but it is not considered that Cæsar is a general name for kings, and that one of the emperors of Germany, who are always styled Cæsars, might have ordered the inscription.

This animal may differ in the term of his life according to the goodness of his pasture, or the undisturbed repose he happens to enjoy. These are advantages that influence not only his age, but his size and his vigour. The stags of the plains, the valleys, and the little hills, which abound in corn and pasture, are much more corpulent and much taller than such as are bred on the rocky waste, or the heathy mountain. The latter are low, small, and meagre, incapable of going so swift as the former, although they are found to hold out much longer. They are also more artful in evading the hunters; their horns are generally black and short, while those of the lowland stags are reddish and flourishing; so that the animal seems to increase in beauty and stature in proportion to the goodness of the pasture, which he enjoys in security.

The usual colour of the stag in England was red; nevertheless, the greater number in other countries are brown. There are some few that are white; but these seem to have obtained this colour in a former state of domestic tameness. Of all the animals that are natives of this climate, there are none that have such a beautiful eye as the stag; it is sparkling, soft, and sensible. His senses of smelling and hearing are in no less perfection. When he is in the least alarmed, he lifts the head and erects the ears, standing for a few minutes as if in a listening posture. Whenever he ventures upon some unknown ground, or quits his native covering, he first stops at the skirt of the plain to examine all around; he next turns against the wind, to examine by the smell if there be any enemy approaching. If a person should happen to whistle or call out, at a distance, the stag is seen to stop short in his slow-measured pace, and gazes upon the stranger with a kind of awkward admiration; if the cunning animal perceives neither dogs nor fire-arms preparing against him, he goes forward, quite unconcerned, and slowly proceeds without

offering to fly. Man is not the enemy he is most afraid of; on the contrary, he seems to be delighted with the sound of the shepherd's pipe; and the hunter sometimes makes use of that instrument to allure the poor animal to his destruction.

The stag eats slowly, and is very delicate in the choice of his pasture. When he has eaten a sufficiency, he then retires to the covert of some thicket to chew the cud in security. His rumination, however, seems performed with much greater difficulty than with the cow or sheep; for the grass is not returned from the first stomach without much straining, and a kind of hiccup, which is easily perceived during the whole time it continues. This may proceed from the greater length of his neck, and the narrowness of the passage, all those of the cow and the sheep kind having it much wider.

This animal's voice is much stronger, louder, and more tremulous, in proportion as he advances in age; in the time of rut it is even terrible. At that season he seems so transported with passion, that nothing obstructs his fury; and, when at bay, he keeps the dogs off with great intrepidity. Some years ago, William, Duke of Cumberland, caused a tiger and a stag to be enclosed in the same area; and the stag made so bold a defence, that the tiger was at last obliged to fly. The stag seldom drinks in the winter, and still less in the spring, while the plants are tender and covered over with dew. It is in the heat of summer, and during the time of rut, that he is seen constantly frequenting the sides of rivers and lakes, as well to slake his thirst as to cool his ardour. He swims with great ease and strength, and best at those times when he is fattest, his fat keeping him buoyant, like oil upon the surface of the water. During the time of rut he even ventures out to sea, and swims from one island to another, although there may be some leagues distance between them.

The cry of the hind, or female, is not so loud as that of the male, and is never excited but by apprehension for herself or her young. It need scarcely be mentioned that she has no horns, or that she is more feeble or unfit for hunting than the male. When once they have conceived, they separate from the males, and then they both herd apart. The time of gestation continues between eight and nine months,

and they generally produce but one at a time. Their usual season for bringing forth is about the month of May, or the beginning of June, during which they take great care to hide their young in the most obscure thickets. Nor is the precaution without reason, since almost every creature is then a formidable enemy. The eagle, the falcon, the ospray, the wolf, the dog, and all the rapacious family of the cat kind, are in continual employment to find out her retreat. But, what is more unnatural still, the stag himself is a professed enemy, and she is obliged to use all her arts to conceal her young from him, as from the most dangerous of her pursuers. At this season, therefore, the courage of the male seems transferred to the female; she defends her young against her less formidable opponents by force; and when pursued by the hunter, she ever offers herself, to mislead him from the principal object of her concern. She flies before the hounds for half the day, and then returns to her young, whose life she has thus preserved at the hazard of her own. The *calf*, for so the young of this animal is called, never quits the dam during the whole summer; and in winter, the hind, and all the males under a year old, keep together, and assemble in herds, which are more numerous in proportion as the season is more severe. In the spring they separate; the hinds to bring forth, while none but the year-olds remain together: these animals are, however, in general fond of herding and grazing in company; it is danger or necessity alone that separates them.

The dangers they have to fear from other animals, are nothing when compared to those from man. The men of every age and nation have made the chase of the stag one of their most favourite pursuits; and those who first hunted from necessity, have continued it for amusement. In our own country, in particular, hunting was ever esteemed as one of the principal diversions of the great.* At first, indeed, the beasts of the chase had the whole island for their range, and knew no other limits than those of the ocean.

The Roman jurisprudence, which was formed on the manners of the first ages, established it as a law, that, as the natural right of things which have no master belongs to

* British Zoology.

the first possessor, wild beasts, birds, and fishes, are the property of whosoever could first take them. But the northern barbarians who overran the Roman empire, bringing with them the strongest relish for this amusement, and being now possessed of more easy means of subsistence from the lands they had conquered, their chiefs and leaders began to appropriate the right of hunting, and, instead of a natural right, to make it a royal one. When the Saxon kings, therefore, had established themselves into a heptarchy, the chases were reserved by each sovereign for his own particular amusement. Hunting and war, in those uncivilized ages, were the only employment of the great. Their active, but uncultivated minds, were susceptible of no pleasures but those of a violent kind, such as gave exercise to their bodies, and prevented the uneasiness of thinking. But as the Saxon kings only appropriated those lands to the business of the chase which were unoccupied before, so no individuals received any injury. But it was otherwise when the Norman kings were settled upon the throne. The passion for hunting was then carried to an excess, and every civil right was involved in general ruin. This ardour for hunting was stronger than the consideration of religion, even in a superstitious age. The village communities, nay, even the most sacred edifices, were thrown down, and all turned into one vast waste, to make room for animals, the object of a lawless tyrant's pleasure. Sanguinary laws were enacted to preserve the game; and, in the reigns of William Rufus and Henry I., it was less criminal to destroy one of the human species, than a beast of chase. Thus it continued while the Norman line filled the throne; but when the Saxon line was restored, under Henry II., the rigour of the forest-laws was softened. The barons also for a long time imitated the encroachments, as well as the amusements of the monarch; but when property became more equally divided, by the introduction of arts and industry, these extensive hunting grounds became more limited; and as tillage and husbandry increased, the beasts of chase were obliged to give way to others more useful to the community. Those vast tracts of land, before dedicated to hunting, were then contracted; and, in proportion as the useful arts gained ground, they protected and encouraged the labours of the industrious, and repressed the licentiousness of the sports-

man. It is, therefore, among the subjects of a despotic government only, that these laws remain in full force; where large wastes lie uncultivated for the purposes of hunting; where the husbandman can find no protection from the invasions of his lord, or the continual depradations of those animals which he makes the objects of his pleasure.

In the present cultivated state of this country, therefore, the stag is unknown in its wild natural state; and such of them as remain among us are kept, under the name of *red deer*, in parks among the fallow-deer. But they are become less common than formerly; its excessive viciousness during the rutting-season, and the badness of its flesh, inducing most people to part with the species. The few that still remain wild are to be found on the moors that border on Cornwall and Devonshire; and in Ireland, on most of the large mountains of that country.

In England, the hunting the stag and the buck are performed in the same manner; the animal is driven from some gentleman's park, and then hunted through the open country. But those who pursue the wild animal, have a much higher object, as well as a greater variety in the chase. To let loose a creature that was already in our possession, in order to catch it again, is, in my opinion, but a poor pursuit, as the reward, when obtained, is only what we before had given away. But to pursue an animal that owns no proprietor, and which he that first seizes may be said to possess, has something in it that seems at least more rational; this rewards the hunter for his toil, and seems to repay his industry. Besides, the superior strength and swiftness of the wild animal prolongs the amusement; it is possessed of more various arts to escape the hunter, and leads him to precipices where the danger ennobles the chase. In pursuing the animal let loose from a park, as it is unused to danger, it is but little versed in the stratagems of escape; the hunter follows as sure of overcoming, and feels none of those alternations of hope and fear which arise from the uncertainty of success. But it is otherwise with the mountain stag: having spent his whole life in a state of continual apprehension,

having frequently been followed, and as frequently escaped, he knows every trick to mislead, to confound, or intimidate his pursuers; to stimulate their ardour, and enhance their success.

Those who hunt this animal have their peculiar terms for the different objects of their pursuit. The professors in every art take a pleasure in thus employing a language known only to themselves, and thus accumulate words which, to the ignorant, have the appearance of knowledge. In this manner, the stag is called the first year, a *calf*, or *hind calf;* the second, a *knobber;* the third, a *brock;* the fourth, a *staggard;* the fifth, a *stag;* the sixth, a *hart*. The female is called a *hind:* the first year she is a *calf;* the second, a *hearse;* the third, a *hind*. This animal is said to *harbour* in the place where he resides. When he cries, he is said to *bell;* the print of his hoof is called the *slot;* his tail is called the *single;* his excrement, the *fumet:* his horns are called his *head;* when simple, the first year, they are called *broches;* the third year, *spears;* the four year, that part which bears the antlers is called the *beam*, and the little impression upon its surface, *glitters;* those which rise from the crust of the beam are called *pearls*. The antlers also have distinct names; the first that branches off is called the *antler;* the second, the *sur-antler;* all the rest which grow afterwards, till you come to the top, which is called the *crown*, are called *royal antlers;* the little buds about the tops are called *croches*. The impression on the place where the stag has lain, is called the *layer*. If it be in covert, or a thicket, it is called his *harbour*. When a deer has passed into a thicket, leaving marks whereby his bulk may be guessed, it is called an *entry*. When they cast their heads, they are said to *mew*. When they rub their heads against trees, to bring off the peel of their horns, they are said to *fray*. When a stag hard hunted takes to swimming in the water, he is said to *go sail;* when he turns his head against the hounds, he is said to *bay;* and when the hounds pursue upon the scent, until they have unharboured the stag, they are said to *draw on the slot*.

Such are but a few of the many terms used by hunters in pursuing of the stag, most of which are now laid

aside, or in use only among game-keepers. The chase, however, is continued in many parts of the country where the red deer is preserved, and still makes the amusement of such as have not found out more liberal entertainments. In those few places where the animal is perfectly wild, the amusement, as was said above, is superior. The first great care of the hunter, when he leads out his hounds to the mountain side, where the deer are generally known to harbour, is to make choice of a proper stag to pursue. His ambition is to unharbour the largest and the boldest of the whole herd; and for this purpose he examines the track, if there be any, which if he finds long and large, he concludes, that it must have belonged to a stag, and not a hind, the print of whose foot is rounder. Those marks also which he leaves on trees, by the rubbing of his horns, shew his size, and point him out as the proper object of pursuit. Now to seek out a stag in his haunt it is to be observed, that he changes his manner of feeding every month. From the conclusion of rutting time, which is in November, he feeds on heaths and broomy places. In December, they herd together, and withdraw into the strength of the forests, to shelter themselves from the severer weather, feeding on holm, elder-trees, and brambles. The three following months they leave herding, but keep four or five in a company, and venture out to the corners of the forest, where they feed on winter pasture, sometimes making their incursions into the neighbouring corn-fields, to feed upon the tender shoots, just as they peep above ground. In April and May they rest in thickets and shady places, and seldom venture forth unless roused by approaching danger. In September and October their annual ardour returns; and then they leave the thickets, boldly facing every danger, without any certain place for food or harbour. When, by a knowledge of these circumstances, the hunter has found out the residence, and the quality of his game, his next care is to uncouple and cast off his hounds in the pursuit: these no sooner perceive the timorous animal that flies before them, but they altogether open in full cry, pursuing rather by the scent than the view, encouraging each other to continue the chase, and tracing the flying animal with the most amazing

sagacity. The hunters also are not less ardent in their speed on horseback, cheering up the dogs, and directing them where to pursue. On the other hand, the stag, when unharboured, flies at first with the swiftness of the wind, leaving his pursuers several miles in the rear; and at length having gained his former coverts, and no longer hearing the cries of the dogs and men that he had just left behind, he stops, gazes round him, and seems to recover his natural tranquillity. But this calm is of short duration, for his inveterate pursuers slowly and securely trace him along, and he once more hears the approaching destruction from behind. He again, therefore, renews his efforts to escape, and again leaves his pursuers at almost the former distance; but this second effort makes him more feeble than before, and when they come up a second time, he is unable to outstrip them with equal velocity. The poor animal now, therefore, is obliged to have recourse to all his little arts of escape, which sometimes, though but seldom, avail him. In proportion as his strength fails him, the ardour of his pursuers is inflamed; he tracks more heavily on the ground, and this increasing the strength of the scent, redoubles the cries of the hounds, and enforces their speed. It is then that the stag seeks for refuge among the herd, and tries every artifice to put off some other head for his own. Sometimes he will send forth some little deer in his stead, in the mean time lying close himself, that the hounds may overshoot him. He will break into one thicket after another, to find deer, rousing them, gathering them together, and endeavouring to put them upon the tracks he has made. His old companions, however, with a true spirit of ingratitude, now all forsake and shun him with the most watchful industry, leaving the unhappy creature to take his fate by himself. Thus abandoned of his fellows, he again tries other arts, by doubling and crossing in some hard-beaten highway, where the scent is least perceivable. He now also runs against the wind, not only to cool himself, but the better to hear the voice, and judge of the distance of his implacable pursuers. It is now easily perceivable how sorely he is pressed, by his manner of running, which from the bounding easy pace with which he begun, is converted into a stiff and short

manner of going; his mouth also is black and dry, without foam on it; his tongue hangs out; and the tears, as some say, are seen starting from his eyes. His last refuge, when every other method of safety has failed him, is to take the water, and to attempt an escape by crossing whatever lake or river he happens to approach. While swimming, he takes all possible care to keep in the middle of the stream, lest, by touching the bough of a tree, or the herbage on the banks, he may give scent to the hounds. He is also ever found to swim against the stream; whence the huntsmen have made it into a kind of proverb, *That he that would his chase find, must up with the river and down with the wind.* On this occasion too he will often cover himself under water, so as to shew nothing but the tip of his nose. Every resource, and every art, being at length exhausted, the poor creature tries the last remains of his strength, by boldly opposing those enemies he cannot escape; he therefore faces the dogs and men, threatens with his horns, guards himself on every side, and for some time stands at bay. In this manner, quite desperate, he furiously aims at the first dog or man that approaches; and it often happens that he does not die unrevenged. At that time, the more prudent, both of the dogs and men, seem willing to avoid him; but the whole pack quickly coming up, he is soon surrrounded and brought down, and the huntsman winds a *treble mort*, as it is called, with his horn.

Such is the manner of pursuing this animal in England; but every country has a peculiar method of its own, adapted either to the nature of the climate, or the face of the soil. The ancient manner was very different from that practised at present; they used their dogs only to find out the game, but not to rouse it. Hence they were not curious as to the music of their hounds, or the composition of their pack; the dog that opened before he had discovered his game, was held in no estimation. It was their usual manner silently to find out the animal's retreat, and surround it with nets and engines, then to drive him up with all their cries, and thus force him into the toils which they had previously prepared. In succeeding times the fashion seemed to alter; and particularly in Sicily, the manner of hunting was as follows. The nobles and gentry being informed which way a herd of deer passed, gave notice to one another, and appointed

a day of hunting. For this purpose, every one was to bring a cross-bow, or a long bow, and a bundle of staves shod with iron, the heads bored, with a cord passing through them all. Thus provided, they came to where the herd continued grazing, and casting themselves about in a large ring, surrounded the deer on every side. Then each taking his stand, unbound his fagot, set up his stake, and tied the end of the cord to that of his next neighbour, at the distance of about ten feet one from the other. Between each of these stakes was hung a bunch of crimson feathers, and so disposed, that with the least breath of wind they would whirl round, and preserve a sort of fluttering motion. This done, the persons who set up the staves withdrew, and hid themselves in the neighbouring coverts; then the chief huntsman, entering with his hounds within the lines, roused the game with a full cry. The deer, frighted, and flying on all sides, upon approaching the lines, were scared away by the fluttering of the feathers, and wandered about within this artificial paling, still awed by the shining and fluttering plumage that encircled their retreat; the huntsman, however, still pursuing, and calling every person by name, as he passed by their stand, commanded him to shoot the first, third, or sixth, as he pleased; and if any of them missed, or singled out another than that assigned him, it was considered as a most shameful mischance. In this manner, however, the whole herd was at last destroyed; and the day concluded with mirth and feasting.*

The stags of China are of a particular kind, for they are no taller than a common house-dog; and hunting them is one of the principal diversions of the great. Their flesh, while young, is exceedingly good; but when they arrive at maturity, it begins to grow hard and tough: however, the tongue, the muzzle, and the ears, are in particular esteem among that luxurious people. Their manner of taking them is singular enough: they carry with them the heads of some of the females stuffed, and learn exactly to imitate their cry; upon this the male does not fail to appear, and looking on all sides, perceives the head, which is all that the hunter, who is himself concealed, discovers. Upon their nearer approach, the whole company rise, surround, and often take him alive.

* Pier. Hieroglyph. lib. vii. cap. 6.

There are very few varieties in the red deer of this country; and they are mostly found of the same size and colour. But it is otherwise in different parts of the world, where they are seen to differ in form, in size, in horns, and in colour.

The stag of Corsica is a very small animal, being not above half the size of those common among us. His body is short and thick, his legs short, and his hair of a dark brown.

There is, in the forests of Germany, a kind of stag, named by the ancients the *Tragelaphus*, and which the natives call the *bran deer*, or the *brown deer*. This is of a darker colour than the common stag, of a lighter shade upon the belly, long hair upon the neck and throat, by which it appears bearded like the goat.

There is also a very beautiful stag, which, by some, is said to be a native of Sardinia; but others (among whom is Mr. Buffon) are of opinion that it comes from Africa, or the East Indies. He calls it the *axis*, after Pliny; and considers it as making the shade between the stag and the fallow-deer. The horns of the axis are round, like those of the stag; but the form of its body entirely resembles that of the buck, and the size also is exactly the same. The hair is of four colours; namely, sallow, white, black, and gray. The white is predominant under the belly, on the inside of the thighs, and the legs. Along the back there are two rows of spots in a right line; but those on other parts of the body are very irregular. A white line runs along each side of this animal, while the head and neck are gray. The tail is black above, and white beneath; and the hair upon it is six inches long.

Although there are but few individuals of the deer kind, yet the race seems diffused over all parts of the earth. The new continent of America, in which neither the sheep, the goat, nor the gazelle, have been originally bred, nevertheless produces stags, and other animals of the deer kind, in sufficient plenty. The Mexicans have a breed of white stags in their parks, which they call *stags royal*.* The stags of Canada differ from ours in nothing except the size of the horns, which in them is greater; and the direction of

* Buffon, vol. xii. p. 35.

the antlers, which rather turn back, than project forward, as in those of Europe. The same difference of size that obtains among our stags is also to be seen in that country; and, as we are informed by Ruysch, the Americans have brought them into the same state of domestic tameness that we have our sheep, goats, or black cattle. They send them forth in the day-time to feed in the forests; and at night they return home with the herdsman who guards them. The inhabitants have no other milk but what the hind produces; and use no other cheese but what is made from thence. In this manner we find, that an animal which seems made only for man's amusement, may be easily brought to supply his necessities. Nature has many stores of happiness and plenty in reserve, which only want the call of industry to be produced, and now remain as candidates for human approbation.*

THE FALLOW-DEER.

No two animals can be more nearly allied than the stag and the fallow-deer.† Alike in form, alike in disposition, in the superb furniture of their heads, in their swiftness and timidity; and yet no two animals keep more distinct, or avoid each other with more fixed animosity. They are never seen to herd in the same place, they never engender together, or form a mixed breed; and even in those countries where the stag is common, the buck seems to be entirely a stranger; in short, they both form distinct families; which, though so seemingly near, are still remote; and although with the same habitudes, yet retain an unalterable aversion. The fallow-deer, as they are much smaller, so they seem of a nature less robust, and less savage than those of the stag kind. They are found but rarely wild in the forests; they are, in general, bred up in parks, and kept for the purposes

* In the mountainous parts of Hircania, Russia, and Siberia, is found a species of deer something larger than the roe-buck. The colour is brown, with the outsides of the limbs and under parts of the body yellowish. The hinder parts of the thighs are white, forming a large patch on the back of the animal. The space round the nose and sides of the lower lip are black, but the tip of the lip is white. It has no tail, but a mere broadish excrescence.

† Buffon, vol. xii. p. 36.

of hunting, or of luxury, their flesh being preferred to that of any other animal. It need scarcely be mentioned, that the horns of the buck made its principal distinction, being broad and palmated; whereas those of the stag are in every part round. In the one, they are flatted and spread like the palm of the hand; in the other, they grow like a tree, every branch being of the shape of the stem that bears it. The fallow-deer also has the tail longer, and the hair lighter, than the stag; in other respects, they pretty near resemble one another.

The head of the buck, as of all other animals of this kind, is shed every year, and takes the usual time for repairing. The only difference between it and the stag is, that this change happens later in the buck; and its rutting-time consequently falls more into the winter. It is not found so furious at this season as the former; nor does it so much exhaust itself by the violence of its ardour. It does not quit it natural pastures in quest of the female, nor does it attack other animals with indiscriminate ferocity: however, the males combat for the female among each other; and it is not without many contests that one buck is seen to become master of the whole herd. It often happens also that a herd of fallow-deer is seen to divide into two parties, and engage each other with great ardour and obstinacy.* They both seem desirous of gaining some favourite spot of the park for pasture, and of driving the vanquished party into the coarser and more disagreeable parts. Each of these factions has its particular chief; namely, the two oldest and strongest of the herd. These lead on to the engagement; and the rest follow under their direction. These combats are singular enough, from the disposition and conduct which seems to regulate their mutual efforts. They attack with order, and support the assault with courage; they come to each other's assistance, they retire, they rally, and never give up the victory upon a single defeat. The combat is renewed for several days together; until at length the most feeble side is obliged to give way, and is content to escape to the most disagreeable part of the park, where only they can find safety and protection.

The fallow-deer is easily tamed, and feeds upon many

* Buffon, vol. xii. p. 36.

things which the stag refuses. By this means it preserves its venison better; and even after rutting it does not appear entirely exhausted. It continues almost in the same state through the whole year, although there are particular seasons when its flesh is chiefly in esteem. This animal also browzes closer than the stag; for which reason it is more prejudicial among young trees, which it often strips too close for recovery. The young deer eat much faster, and more greedily than the old; they seek the female at their second year; and, like the stag, are fond of variety. The doe goes with young about eight months, like the hind; and commonly brings forth one at a time; but they differ in this, that the buck comes to perfection at three, and lives till sixteen; whereas the stag does not come to perfection till seven, and lives till forty.

As this animal is a beast of chase, like the stag, so the hunters have invented a number of names relative to him. The buck is the first year called a *fawn*; the second, a *pricket*; the third, a *sorel*; the fourth, a *sore*; the fifth, a *buck of the first head*; and the sixth, a *great buck*. The female is called a *doe*; the first year, a *fawn*; and the second, a *tegg*. The manner of hunting the buck is pretty much the same as that of stag-hunting, except that less skill is required in the latter. The buck is more easily roused; it is sufficient to judge by the view, and mark what grove or covert it enters, as it is not known to wander far from thence; nor, like the stag, to change its *layer*, or place of repose. When hard hunted, it takes to some strong hold, or covert, with which it is acquainted, in the more gloomy parts of the wood, or the steeps of the mountain; not, like the stag, flying far before the hounds, nor crossing nor doubling, nor using any of the subtleties which the stag is accustomed to. It will take the water when sorely pressed, but seldom a great river; nor can it swim so long, nor so swiftly, as the former. In general, the strength, the cunning, and the courage of this animal, are inferior to those of the stag; and consequently it affords neither so long, so various, nor so obstinate a chase: besides, being lighter, and not tracking so deeply, it leaves a less powerful and lasting scent, and the dogs in the pursuit are more frequently at a fault.

As the buck is a more delicate animal than the stag, so

also is it subject to greater varieties.* We have in England two varieties of the fallow-deer, which are said to be of foreign origin: the beautiful spotted kind, which is supposed to have been brought from Bengal; and the very deep brown sort that are now so common in several parts of this kingdom. These were introduced by King James the First from Norway: for having observed their hardiness, and that they could endure the winter, even in that severe climate, without fodder, he brought over some of them into Scotland, and disposed of them among his chases. Since that time they have multiplied in many parts of the British empire; and England is now become more famous for its venison than any other country in the world. Whatever pains the French have taken to rival us in this particular, the flesh of their fallow-deer, of which they keep but a few, has neither the fatness nor the flavour of that fed upon English pasture.

However, there is scarcely a country in Europe, except far to the northward, in which this animal is a stranger. The Spanish fallow-deer are as large as stags, but of a darker colour, and a more slender neck: their tails are longer than those of ours, they are black above, and white below. The Virginian deer are larger and stronger than ours, with great necks, and their colour inclinable to gray. Other kinds have the hoofs of their hind-legs marked outwardly with a white spot; and their ears and tail much longer than the common. One of these has been seen full of white spots, with a black list down the middle of his back. In Guiana, a country of South America, according to Labat, there are deer without horns, which are much less than those of Europe, but resembling them in every other particular. They are very lively, light of course, and excessively fearful; their hair is of a reddish sallow, their heads are small and lean, their ears little, their necks long and arched, the tail short, and the sight piercing. When pursued, they fly into places where no other animal can follow them. The negroes, who pursue them, stand to watch for them in narrow paths, which lead to the brook, or the meadow where they feed; there waiting in the utmost silence, for the slightest sound will drive them away; the negro, when he perceives the animal within reach, shoots, and is happy if he can bring

* British Zoology

down his game. Their flesh, though seldom fat, is considered as a great delicacy, and the hunter is well rewarded for his trouble.*

THE ROE-BUCK.

The Roe-buck is the smallest of the deer kind known in our climate, and is now almost extinct among us, except in some parts of the Highlands of Scotland. It is generally about three feet long, and about two feet high. The horns are from eight to nine inches long, upright, round, and divided into only three branches. The body is covered with very long hair, well adapted to the rigour of its mountainous abode. The lower part of each hair is ash-colour; near the ends is a narrow bar of black, and the points are yellow. The hairs on the face are black, tipped with ash colour. The ears are long, their insides of a pale yellow, and covered with long hair. The spaces bordering on the eyes and mouth are black. The chest, belly, and legs, and the inside of the thighs, are of a yellowish white; the rump is of a pure white, and the tail very short. The make of this little animal is very elegant; and its swiftness equals its beauty. It differs from the fallow-deer, in having round horns, and not flatted like theirs. It differs from the stag, in its smaller size, and the proportionable paucity of its antlers: and it differs from all of the goat kind, as it annually sheds its head, and obtains a new one, which none of that kind are ever seen to do.

* The accurate observer of nature, Mr. White, in his Natural History of Selborne, communicates an extraordinary provision with which these animals are endowed. When they drink, they plunge their noses deep under water, and continue them in that situation a long time: but to obviate any inconvenience which might arise from this kind of immersion, they are furnished with two spiracles or vents, one at the inner corner of each eye communicating with the nostrils, and which they can open at pleasure. These seem to be highly serviceable to them in the chase, by affording them the means of respiration: for, without doubt, these additional nostrils are thrown open when they are hard run. Mr. Pennant has likewise observed something analogous to this in the antelope. "This animal," says he, "has a long slit beneath each eye, which can be opened and shut at pleasure: on holding an orange to one, the creature made the same use of those orifices as of his nostrils, applying them to the fruit, and seeming to smell it through them."

As the stag frequents the thickest forests, and the sides of the highest mountains, the roe-buck, with humbler ambition, courts the shady thicket, and the rising slope. Although less in size, and far inferior in strength to the stag, it is yet more beautiful, more active, and even more courageous. Its hair is always smooth, clean, and glossy; and it frequents only the dryest places, and of the purest air. Though but a very little animal, as we have already observed, yet when its young is attacked, it faces even the stag himself, and often comes off victorious.* All its motions are elegant and easy; it bounds without effort, and continues the course with but little fatigue. It is also possessed of more cunning in avoiding the hunter, is more difficult to pursue, and, although its scent is much stronger than that of the stag, it is more frequently found to make good a retreat. It is not with the roe-buck as with the stag, who never offers to use art until his strength is beginning to decline; this more cunning animal, when it finds that its first efforts to escape are without success, returns upon its former track, again goes forward, and again returns, until by its various windings it has entirely confounded the scent, and joined the last emanations to those of its former course. It then, by a bound, goes to one side, lies flat upon its belly, and permits the pack to pass by very near, without offering to stir.

But the roe-buck differs not only from the stag in superior cunning, but also in its natural appetites, its inclinations, and its whole habits of living. Instead of herding together, these animals live in separate families; the sire, the dam, and the young ones, associate together, and never admit a stranger into their little community. All others of the deer kind are inconstant in their affection; but the roe-buck never leaves its mate; and, as they have been generally bred up together from their first fawning, they conceive so strong an attachment, the male for the female, that they never after separate. Their rutting season continues but fifteen days; from the latter end of October to about the middle of November. They are not at that time, like the stag, overloaded with fat; they have not that strong odour, which is perceived in all others of the deer kind; they have none of those furious excesses; nothing,

* Buffon, vol. xii. p. 75.

in short, that alters their state: they only drive away their fawns upon these occasions; the buck forcing them to retire, in order to make room for a succeeding progeny; however, when the copulating season is over, the fawns return to their does, and remain with them some time longer; after which, they quit them entirely, in order to begin an independent family of their own. The female goes with young but five months and a half, which alone serves to distinguish this animal from all others of the deer kind, that continue pregnant more than eight. In this respect, she rather approaches more nearly to the goat kind; from which, however, this race is separated by the male's annual casting its horns.

When the female is ready to bring forth, she seeks a retreat in the thickest part of the woods, being not less apprehensive of the buck, from whom she then separates, than of the wolf, the wild cat, and almost every ravenous animal of the forest; she generally produces two at a time, and three but very rarely. In about ten or twelve days these are able to follow the dam, except in cases of warm pursuit, when their strength is not equal to the fatigue. Upon such occasions, the tenderness of the dam is very extraordinary; leaving them in the deepest thicket, she offers herself to the danger, flies before the hounds, and does all in her power to lead them from the retreat where she has lodged her little ones. Such animals as are nearly upon her own level she boldly encounters; attacks the stag, the wild cat, and even the wolf; and while she has life, continues her efforts to protect her young. Yet all her endeavours are often vain; about the month of May, which is her fawning time, there is a greater destruction among those animals than at any other season of the year. Numbers of the fawns are taken alive by the peasants; numbers are found out, and worried by the dogs; and still more by the wolf, which has always been their most inveterate enemy. By these continual depredations upon this beautiful creature, the roe-buck is every day becoming scarcer; and the whole race in many countries is wholly worn out. They were once common in England; the huntsmen, who characterized only such beasts as they knew, have given names to the different kinds and ages, as to the stag: thus they called it the first year a *hind;* the

second, a *gyrle*; and the third, a *hemuse*; but these names at present are utterly useless, since the animal no longer exists among us. Even in France, where it was once extremely common, it is now confined to a few provinces; and it is probable that in an age or two the whole breed will be utterly extirpated. Mr. Buffon, indeed, observes, that in those districts where it is mostly found, it seems to maintain its usual plenty, and that the balance between its destruction and increase is held pretty even: however, the number in general is known to decrease; for wherever cultivation takes place, the beasts of nature are known to retire. Many animals that once flourished in the world may now be extinct; and the descriptions of Aristotle and Pliny, though taken from life, may be considered as fabulous, as their archetypes are no longer existing.

The fawns continue to follow the deer eight or nine months in all; and, upon separating, their horns begin to appear simple, and without antlers, the first year, as in those of the stag kind.* These they shed at the latter end of autumn, and renew during the winter; differing in this from the stag, who sheds them in spring, and renews them in summer. When the roe-buck's head is completely furnished, it rubs the horns against the trees in the manner of the stag, and thus strips them of the rough skin and the blood-vessels, which no longer contribute to their nourishment and growth. When these fall, and new ones begin to appear, the roe-buck does not retire, as the stag, to the covert of the wood, but continues its usual haunts, only keeping down its head to avoid striking its horns against the branches of trees, the pain of which it seems to feel with exquisite sensibility. The stag, who sheds his horns in summer, is obliged to seek a retreat from the flies, that at that time greatly incommode him; but the roe-buck, who sheds them in winter, is under no such necessity; and, consequently, does not separate from its little family, but keeps with the female all the year round.†

As the growth of the roe-buck, and its arrival at maturity, is much speedier than that of the stag, so its life is proportionably shorter. It seldom is found to extend above twelve or fifteen years; and, if kept tame, it does

* Buffon, vol. xii. p. 88. † Buffon, ibid.

not live above six or seven. It is an animal of a very delicate constitution, requiring variety of food, air, and exercise. It must be paired with a female, and kept in a park of at least a hundred acres. They may easily be subdued, but never thoroughly tamed. No arts can teach them to be familiar with the feeder, much less attached to him. They still preserve a part of their natural wildness, and are subject to terrors without a cause. They sometimes, in attempting to escape, strike themselves with such force against the walls of their enclosure, that they break their limbs, and become utterly disabled. Whatever care is taken to tame them, they are never entirely to be relied on, as they have capricious fits of fierceness, and sometimes strike at those they dislike with a degree of force that is very dangerous.

The cry of the roe-buck is neither so loud nor so frequent as that of the stag. The young ones have a particular manner of calling to the dam, which the hunters easily imitate, and often thus allure the female to her destruction. Upon some occasions also they become in a manner intoxicated with their food, which, during the spring, is said to ferment in their stomachs, and they are then very easily taken. In summer they keep close under covert of the forest, and seldom venture out, except in violent heats, to drink at some river or fountain. In general, however, they are contented to slake their thirst with the dew that falls on the grass and the leaves of trees, and seldom risk their safety to satisfy their appetite. They delight chiefly in hilly grounds, preferring the tender branches and buds of trees, to corn or other vegetables; and it is universally allowed that the flesh of those between one and two years old is the greatest delicacy that is known. Perhaps, also, the scarceness of it enhances its flavour.

In America this animal is much more common than in Europe. With us there are but two known varieties; the red, which is the larger sort; and the brown, with a spot behind, which is less. But in the new continent the breed is extremely numerous, and the varieties in equal proportion. In Louisiana, where they are extremely common, they are much larger than in Europe, and the inhabitants live in a great measure upon its flesh, which tastes like

mutton when well fatted. They are found also in Brazil, where they have the name of *cuguacu apara*, only differing from ours in some slight deviations in the horns. This animal is also said to be common in China; although such as have described it seem to confound it with the musk goat, which is of a quite different nature.

THE ELK

We have hitherto been describing minute animals in comparison of the elk; the size of which, from concurrent testimony, appears to be equal to that of the elephant itself. It is an animal rather of the buck than the stag kind, as its horns are flatted towards the top; but it is far beyond both in stature, some of them being known to be above ten feet high. It is a native both of the old and new continent, being known in Europe under the name of the *elk*, and in America, by that of the *moose-deer*. It is sometimes taken in the German and Russian forests, although seldom appearing; but it is extremely common in North America, where the natives pursue and track it in the snow. The accounts of this animal are extremely various; some describing it as being no higher than a horse, and others above twelve feet high.

As the stature of this creature makes its chief peculiarity, so it were to be wished that we could come to some precision upon that head. If we were to judge of its size by the horns, which are sometimes fortuitously dug up in many parts of Ireland, we should not be much amiss in ascribing them to an animal at least ten feet high. One of these I have seen, which was ten feet nine inches from one tip to the other. From such dimensions, it is easy to perceive that it required an animal far beyond the size of a horse to support them. To bear a head with such extensive and heavy antlers, required no small degree of strength; and without all doubt the bulk of the body must have been proportionable to the size of the horns. I remember some years ago to have seen a small moose-deer, which was brought from America by a gentleman of Ireland; it was about the size of a horse, and the horns were very little larger than those of a common stag: this, therefore, serves to prove that the horns bear an exact proportion to the animal's size; the small elk has but

small horns; whereas those enormous ones, which we have described above, must have belonged to a proportionable creature. In all the more noble animals, Nature observes a perfect symmetry; and it is not to be supposed she fails in this single instance. We have no reason, therefore, to doubt the accounts of Jocelyn and Dudley, who affirm that they have been found fourteen spans; which, at nine inches to a span, makes the animal almost eleven feet high. Others have extended their accounts to twelve and fourteen feet, which makes this creature one of the most formidable of the forest.

There is but very little difference between the European elk and the American moose-deer, as they are but varieties of the same animal. It may be rather larger in America than with us; as in the forests of that unpeopled country it receives less disturbance than in our own. In all places, however, it is timorous and gentle; content with its pasture, and never willing to disturb any other animal, when supplied itself. The European elk grows to above seven or eight feet high. In the year 1742, there was a female of this animal shown at Paris, which was caught in a forest of Red Russia, belonging to the Cham of Tartary;* it was then but young, and its height was even at that time six feet seven inches; but the describer observes, that it has since become much taller and thicker, so that we may suppose this female at least seven feet high. There have been no late opportunities of seeing the male; but, by the rule of proportion, we may estimate his size at eight or nine feet at the least, which is about twice as high as an ordinary horse. The height, however, of the female which was measured, was but six feet seven inches, Paris measure; or almost seven English feet high. It was ten feet from the tip of the nose to the insertion of the tail; and eight feet round the body. The hair was very long and coarse, like that of a wild boar. The ears resembled those of a mule, and were a foot and a half long. The upper jaw was longer by six inches than the lower; and, like other ruminating animals, it had no teeth (cutting-teeth, I suppose the describer means.) It had a large beard under the throat, like a goat; and in the middle of the forehead, between the horns, there was a bone as large as an egg. The nostrils

* Dictionnaire Raisonnée des Animaux. Au Nom, Elan.

were four inches long on each side of the mouth. It made use of its fore-feet as a defence against its enemies. Those who shewed it, asserted that it ran with astonishing swiftness; and that it swam also with equal expedition, and was very fond of the water. They gave it thirty pounds of bread every day, besides hay, and it drank eight buckets of water. It was tame and familiar, and submissive enough to its keeper.

This description differs in many circumstances from that which we have of the moose, or American elk, which the French call the original. Of these there are two kinds, the common light gray moose, which is not very large; and the black moose, which grows to an enormous height. Mr. Dudley observes, that a doe or hind of the black moose kind, of the fourth year, wanted but an inch of seven feet high. All, however, of both kinds, have flat palmed horns, not unlike the fallow-deer, only that the palm is much larger, having a short trunk at the head, and then immediately spreading above a foot broad, with a kind of small antlers, like teeth, on one of the edges. In this particular, all of the elk kind agree; as well the European elk, as the gray and the black moose-deer.

The gray moose-deer is about the size of a horse; and, although it has large buttocks, its tail is not above an inch long. As in all of this kind the upper lip is much longer than the under, it is said that they continue to go backward as they feed. Their nostrils are so large that a man may thrust his hand in a considerable way; and their horns are as long as those of a stag, but, as was observed, much broader.

The black moose is the enormous animal mentioned above, from eight to twelve feet high. Jocelyn, who is the first English writer that mentions it, says, that it is a goodly creature, twelve feet high, with exceeding fair horns, that have broad palms, two fathoms from the top of one horn to another. He assures us that it is a creature, or rather a monster of superfluity, and many times bigger than an English ox. This account is confirmed by Dudley; but he does not give so great an expansion to the horns, measuring them only thirty-one inches between one tip and the other: however, that such an extraordinary animal as Jocelyn describes, has actually existed, we can make no manner of doubt of, since there are horns com-

mon enough to be seen among us, twelve feet from one tip to the other.

These animals delight in cold countries, feeding upon grass in summer, and the bark of trees in winter. When the whole country is deeply covered with snow, the moose-deer herd together under the tall pine-trees, strip off the bark, and remain in that part of the forest while it yields them subsistence. It is at that time that the natives prepare to hunt them: and particularly when the sun begins to melt the snow by day, which is frozen again at night; for then the icy crust which covers the surface of the snow, is too weak to support so great a bulk, and only retards the animal's motion. When the Indians, therefore, perceive a herd of these at a distance, they immediately prepare for their pursuit, which is not, as with us, the sport of an hour, but is attended with toil, difficulty, and danger.* The timorous animal no sooner observes its enemies approach, than it immediately endeavours to escape, but sinks at every step it takes. Still, however, it pursues its way through a thousand obstacles: the snow, which is usually four feet deep, yields to its weight, and embarrasses its speed; the sharp ice wounds its feet; and its lofty horns are entangled in the branches of the forest, as it passes along. The trees, however, are broken down with ease; and wherever the moose-deer runs, it is perceived by the snapping off the branches of the trees, as thick as a man's thigh, with its horns. The chase lasts in this manner for the whole day; and sometimes it has been known to continue for two, nay three days together; for the pursuers are often not less excited by famine, than the pursued by fear. Their perseverance, however, generally succeeds; and the Indian who first comes near enough, darts his lance with unerring aim, which sticks in the poor animal, and at first increases its efforts to escape. In this manner the moose trots heavily on, (for that is its usual pace,) till its pursuers once more come up, and repeat their blow: upon this, it again summons up sufficient vigour to get a-head; but, at last, quite tired, and spent with loss of blood, it sinks, as the describer expresses it, like a ruined building, and makes the earth shake beneath its fall.

This animal, when killed, is a very valuable acquisition to the hunters. The flesh is very well tasted, and said to

* Phil. Trans. vol. ii p. 436.

be very nourishing. The hide is strong, and so thick that it has been often known to turn a musket-ball; however, it is soft and pliable, and, when tanned, the leather is extremely light, yet very lasting. The fur is a light gray in some, and blackish in others; and when viewed through a microscope, appears spongy like a bulrush, and is smaller at the roots and points than in the middle; for this reason, it lies very flat and smooth, and though beaten or abused never so much, it always returns to its former state. The horns also are not less useful, being applied to all the purposes for which hartshorn is beneficial: these are different in different animals; in some they resemble entirely those of the European elk, which spread into a broad palm, with small antlers on one of the edges; in others they have a branched brow-antler between the bur and the palm, which the German elk has not; and in this they entirely agree with those whose horns are so frequently dug up in Ireland. This animal is said to be troubled with the epilepsy, as it is often found to fall down when pursued, and thus becomes an easier prey; for this reason, an imaginary virtue has been ascribed to the hinder hoof, which some have supposed to be a specific against all epileptic disorders. This, however, may be considered as a vulgar error; as well as that of its curing itself of this disorder by applying the hinder hoof behind the ear. After all, this animal is but very indifferently and confusedly described by travellers; each mixing his account with something false or trivial; often mistaking some other quadruped for the elk, and confounding its history. Thus some have mistaken it for the rein-deer, which, in every thing but size, it greatly resembles; some have supposed it to be the same with the Tapurette,* from which it entirely differs; some have described it as the common red American stag, which scarcely differs from our own; and, lastly, some have confounded it with the Bubalus, which is more properly a gazelle of Africa.†

THE REIN-DEER.‡

Of all animals of the deer kind, the rein-deer is the most extraordinary and the most useful. It is a native of

* Condamine. † Dapper, Description de l'Afrique, p. 17.

‡ In the elk the horns are stemless, or branched from the base; in the rein-deer the horns are round, bent back, and palmated at the extremities.

the icy regions of the north: and though many attempts have been made to accustom it to a more southern climate, it shortly feels the influence of the change, and in a few months declines and dies. Nature seems to have fitted it entirely to answer the necessities of that hardy race of mankind that live near the pole. As these would find it impossible to subsist among their barren snowy mountains without its aid, so this animal can live only there, where its assistance is most absolutely necessary. From it alone the natives of Lapland and Greenland supply most of their wants; it answers the purposes of a horse, to convey them and their scanty furniture from one mountain to another; it answers the purposes of a cow, in giving milk; and it answers the purposes of the sheep, in furnishing them with a warm, though a homely, kind of clothing. From this quadruped alone, therefore, they receive as many advantages as we derive from three of our most useful creatures; so that Providence does not leave these poor outcasts entirely destitute, but gives them a faithful domestic, more patient and serviceable than any other in nature.

The rein-deer resembles the American elk in the fashion of its horns. It is not easy in words to describe these minute differences; nor will the reader perhaps, have a distinct idea of the similitude, when told that both have brow-antlers, very large, and hanging over their eyes, palmated towards the top, and bending forward like a bow. But here the similitude between these two animals ends; for, as the elk is much larger than the stag, so the rein-deer is much smaller. It is lower, and stronger built than the stag; its legs are shorter and thicker, and its hoofs much broader than in that animal; its hair is much thicker and warmer; its horns much larger in proportion, and branching forward over its eyes; its ears are much larger; its pace is rather a trot than a bounding, and this it can continue for a whole day; its hoofs are cloven and moveable, so that it spreads them abroad as it goes, to prevent its sinking in the snow. When it proceeds on a journey, it lays its great horns on its back, while there are two branches which always hang over its forehead, and almost cover its face. One thing seems peculiar to this animal and the elk; which is, that as they move along,

their hoofs are heard to crack with a pretty loud noise. This arises from their manner of treading; for as they rest upon their cloven hoof, it spreads on the ground, and the two divisions separate from each other, but when they lift it, the divisions close again, and strike against each other with a crack. The female also of the rein-deer has horns as well as the male; by which the species is distinguished from all other animals of the deer kind whatsoever.

When the rein-deer first shed their coat of hair, they are brown; but in proportion as summer approaches, their hair begins to grow whitish, until, at last, they are nearly gray.* They are, however, always black about the eyes. The neck has long hair, hanging down, and coarser than upon any other part of the body. The feet, just at the insertion of the hoof, are surrounded with a ring of white. The hair in general stands so thick over the whole body, that if one should attempt to separate it, the skin will no where appear uncovered: whenever it falls also, it is not seen to drop from the root, as in other quadrupeds, but seems broken short near the bottom; so that the lower part of the hair is seen growing, while the upper falls away. The horns of the female are made like those of the male, except that they are smaller and less branching. As in the rest of the deer kind, they sprout from the points; and also in the beginning are furnished with a hairy crust, which supports the blood-vessels of most exquisite sensibility. The rein-deer shed their horns, after rutting time, at the latter end of November; and they are not completely furnished again till towards autumn. The female always retains her's till she brings forth, and then sheds them about the beginning of November. If she be barren, however, which is not unfrequently the case, she does not shed them till winter. The castration of the rein-deer does not prevent the shedding of their horns: those which are the strongest cast them early in winter; those which are more weakly, not so soon. Thus, from all these circumstances, we see how greatly this animal differs from the common stag. The female of the rein-deer has horns, which the hind is never seen to have; the rein-deer,

* For the greatest part of this description of the rein-deer, I am obliged to Mr. Hoffberg; upon whose authority, being a native of Sweden, and experienced naturalist, we may confidently rely.

when castrated, renews its horns, which we are assured the stag never does: it differs not less in its habits and manner of living, being tame, submissive, and patient; while the stag is wild, capricious, and unmanageable.

The rein-deer, as was said, is naturally an inhabitant of the countries bordering on the arctic circle. It is not unknown to the natives of Siberia. The North Americans also hunt it under the name of the *caribou*. But in Lapland, this animal is converted to the utmost advantage; and some herdsmen of that country are known to possess above a thousand in a single herd.

Lapland is divided into two districts, the mountainous and the woody. The mountainous part of the country is at best barren and bleak, excessively cold, and uninhabitable during the winter; still, however, it is the most desirable part of this frightful region, and is most thickly peopled during the summer. The natives generally reside on the declivity of the mountains, three or four cottages together, and lead a cheerful and social life. Upon the approach of winter, they are obliged to migrate into the plains below, each bringing down his whole herd, which often amounts to more than a thousand, and leading them where the pasture is in greatest plenty. The woody part of the country is much more desolate and hideous. The whole face of nature there presents a frightful scene of trees without fruit, and plains without verdure. As far as the eye can reach, nothing is to be seen, even in the midst of summer, but barren fields, covered only with a moss, almost as white as snow; no grass, no flowery landscapes, only here and there a pine-tree, which may have escaped the frequent conflagrations by which the natives burn down their forests. But what is very extraordinary, as the whole surface of the country is clothed in white, so, on the contrary, the forests seem to the last degree dark and gloomy. While one kind of moss makes the fields look as if they were covered with snow, another kind blackens over all the trees, and even hides their verdure. This moss, however, which deforms the country, serves for its only support, as upon it alone the rein-deer can subsist. The inhabitants, who, during the summer, lived among the mountains, drive down their herds in winter, and people the plains and woods below. Such of the Laplanders

as inhabit the woods and the plains all the year round, live remote from each other, and having been used to soli tude, are melancholy, ignorant, and helpless. They are much poorer also than the mountaineers; for, while one of those is found to possess a thousand rein-deer at a time, none of these are ever known to rear the tenth part of that number. The rein-deer makes the riches of this people; and the cold mountainous parts of the country agree best with its constitution. It is for this reason, therefore, that the mountains of Lapland are preferred to the woods; and that many claim an exclusive right to the tops of hills, covered in almost eternal snow. As soon as the summer begins to appear, the Laplander, who had fed his rein-deer upon the lower grounds during the winter, then drives them up to the mountains, and leaves the woody country, and the low pasture, which at that season are truly deplorable. The gnats bred by the sun's heat in the marshy bottoms and the weedy lakes, with which the country abounds more than any other part of the world, are all upon the wing, and fill the whole air like clouds of dust in a dry windy day. The inhabitants, at that time, are obliged to daub their faces with pitch, mixed with milk, to shield their skins from their depredations. All places are then so greatly infested, that the poor natives can scarcely open their mouths without fear of suffocation; the insects enter, from their numbers and minuteness, into the nostrils and the eyes, and do not leave the sufferer a moment at his ease. But they are chiefly enemies to the rein-deer; the horns of that animal being then in their tender state, and possessed of extreme sensibility, a famished cloud of insects instantly settle upon them, and drive the poor animal almost to distraction. In this extremity, there are but two remedies to which the quadruped, as well as its master, are obliged to have recourse. The one is, for both to take shelter near the cottage, where a large fire of tree-moss is prepared, which filling the whole place with smoke, keeps off the gnats, and thus by one inconvenience expels a greater; the other is, to ascend to the highest summit of the mountains, where the air is too thin, and the weather too cold, for the gnats to come. There the rein-deer are seen to continue the whole day, although without food, rather than to venture

down into the lower parts, where they can have no defence against their unceasing persecutors. Besides the gnat, there is also a gadfly, that, during the summer season, is no less formidable to them. This insect is bred under their skins, where the egg has been deposited the preceding summer; and it is no sooner produced as a fly, than it again endeavours to deposit its eggs in some place similar to that from whence it came. Whenever, therefore, it appears flying over a herd of rein-deer, it puts the whole body, how numerous soever, into motion; they know their enemy, and do all they can, by tossing their horns, and running among each other, to terrify or avoid it. All their endeavours, however, are too generally without effect; the gadfly is seen to deposit its eggs, which burrowing under the skin, wound it in several places, and often bring on an incurable disorder. In the morning, therefore, as soon as the Lapland herdsman drives his deer to pasture, his greatest care is to keep them from scaling the summits of the mountains where there is no food, but where they go merely to be at ease from the gnats and gadflies that are ever annoying them. At this time there is a strong contest between the dogs and the deer; the one endeavouring to climb up against the side of the hill, and to gain those summits that are covered in eternal snows; the other forcing them down, by barking and threatening, and, in a manner, compelling them into the places where their food is in the greatest plenty. There the men and dogs confine them; guarding them with the utmost precaution the whole day, and driving them home at the proper seasons for milking.

The female brings forth in the middle of May, and gives milk till about the middle of October. Every morning and evening, during the summer, the herdsman returns to the cottage with his deer to be milked, where the women previously have kindled up a smoky fire, which effectually drives off the gnats, and keeps the rein-deer quiet while milking. The female furnishes about a pint, which, though thinner than that of the cow, is, nevertheless, sweeter and more nourishing. This done, the herdsman drives them back to pasture; as he neither folds nor houses them, neither provides for their subsistence during the winter, nor improves their pasture by cultivation.

Upon the return of the winter, when the gnats and flies are no longer to be feared, the Laplander descends into the lower grounds; and as there are but few to dispute the possession of that desolate country, he has an extensive range to feed them in. Their chief, and almost their only food at that time, is the white moss already mentioned; which, from its being fed upon by this animal, obtains the name of the *lichen rangiferinus*. This is of two kinds; the woody lichen, which covers almost all the desert parts of the country like snow; the other is black, and covers the branches of the trees in very great quantities. However unpleasing these may be to the spectator, the native esteems them as one of his choicest benefits, and the most indulgent gift of nature. While his fields are clothed with moss, he envies neither the fertility nor the verdure of the more southern landscape; dressed up warmly in his deer-skin clothes, with shoes and gloves of the same materials, he drives his herd along the desert, fearless and at ease, ignorant of any higher luxury than what their milk and smoke-dried flesh afford him. Hardened to the climate, he sleeps in the midst of ice; or awaking, dozes away his time with tobacco; while his faithful dogs supply his place, and keep the herd from wandering. The deer, in the mean time, with instincts adapted to the soil, pursue their food, though covered in the deepest snow. They turn it up with their noses, like swine; and even though its surface be frozen and stiff, yet the hide is so hardened in that part, that they easily overcome the difficulty. It sometimes, however, happens, though but rarely, that the winter commences with rain, and a frost ensuing, covers the whole country with a glazed crust of ice. Then, indeed, both the rein-deer and the Laplander are undone; they have no provisions laid up in case of accident, and the only resource is to cut down the large pine-trees that are covered with moss, which furnishes but a scanty supply; so that the greatest part of the herd is then seen to perish without a possibility of assistance. It sometimes also happens, that even this supply is wanting; for the Laplander often burns down his woods, in order to improve and fertilize the soil which produces the moss upon which he feeds his cattle.

In this manner, the pastoral life is still continued near

the pole; neither the coldness of the winter, nor the length of the nights, neither the wildness of the forest, nor the vagrant disposition of the herd, interrupt the even tenor of the Laplander's life. By night and day he is seen attending his favourite cattle, and remains unaffected, in a season which would be speedy death to those bred up in a milder climate. He gives himself no uneasiness to house his herds, or to provide a winter subsistence for them; he is at the trouble neither of manuring his grounds, nor bringing in his harvests; he is not the hireling of another's luxury; all his labours are to obviate the necessities of his own situation; and these he undergoes with cheerfulness, as he is sure to enjoy the fruits of his own industry. If, therefore, we compare the Laplander with the peasant of more southern climates, we shall have little reason to pity his situation; the climate in which he lives is rather terrible to us than to him; and as for the rest, he is blessed with liberty, plenty, and ease. The rein-deer alone supplies him with all the wants of life, and some of the conveniences; serving to shew how many advantages nature is capable of supplying, when necessity gives the call. Thus the poor little helpless native, who was originally, perhaps, driven by fear or famine into those inhospitable climates, would seem, at first view, to be the most wretched of mankind: but it is far otherwise; he looks round among the few wild animals that his barren country can maintain, and singles out one from among them, and that of a kind which the rest of mankind have not thought worth taking from a state of nature; this he cultivates, propagates, and multiplies; and from this alone derives every comfort that can soften the severity of his situation.

The rein-deer of this country are of two kinds, the wild and the tame. The wild are larger and stronger, but more mischievous than the others. Their breed, however, is preferred to that of the tame; and the female of the latter is often sent into the woods, from whence she returns home impregnated by one of the wild kind. These are fitter for drawing the sledge, to which the Laplander accustoms them betimes, and yokes them to it by a strap, which goes round the neck, and comes down between their legs. The sledge is extremely light, and shod at the bottom with the skin of a young deer, the hair turned to slide on the

frozen snow. The person who sits on this guides the animal with a cord, fastened round the horns, and encourages it to proceed with his voice, and drives it with a goad. Some of the wild breed, though by far the strongest, are yet found refractory, and often turn upon their drivers; who have then no other resource but to cover themselves with their sledge, and let the animal vent its fury upon that. But it is otherwise with those that are tame; no creature can be more active, patient, and willing; when hard pushed, they will trot nine or ten Swedish miles, or between fifty and sixty English miles, at one stretch. But, in such a case, the poor obedient creature fatigues itself to death, and, if not prevented by the Laplander, who kills it immediately, it will die in a day or two after. In general, they can go about thirty miles without halting, and this without any great or dangerous efforts. This, which is the only manner of travelling in that country, can be performed only in winter, when the snow is glazed over with ice; and although it be a very speedy method of conveyance, yet it is inconvenient, dangerous, and troublesome.

In order to make these animals more obedient, and more generally serviceable, they castrate them; which operation the Laplanders perform with their teeth; these become sooner fat when taken from labour; and they are found to be stronger in drawing the sledge. There is usually one male left entire for every six females; these are in rut from the feast of St. Matthew to about Michaelmas. At this time their horns are thoroughly burnished, and their battles among each other are fierce and obstinate. The females do not begin to breed till they are two years old; and then they continue regularly breeding every year till they are superannuated. They go with young above eight months, and generally bring forth two at a time. The fondness of the dam for her young is very remarkable; it often happens that when they are separated from her, she will return from pasture, keep calling round the cottage for them, and will not desist until, dead or live, they are brought and laid at her feet. They are at first of a light brown; but they become darker with age; and at last the old ones are of a brown, almost approaching to blackness. The young follow the dam for two or three years; but they do not acquire their full growth until four. They are then broke in, and

managed for drawing the sledge; and they continue serviceable for four or five years longer. They never live above fifteen or sixteen years; and when they arrive at the proper age, the Laplander generally kills them for the sake of their skins and their flesh. This he performs by striking them on the back of the neck with his knife into the spinal marrow; upon which they instantly fall, and he then cuts the arteries that lead to the heart, and lets the blood discharge itself into the cavity of the breast.

There is scarcely any part of this animal that is not converted to its peculiar uses. As soon as it begins to grow old, and some time before the rut, it is killed, and the flesh dried in the air. It is also sometimes hardened with smoke, and laid up for travelling provision, when the natives migrate from one part of the country to another. During the winter, the rein-deer are slaughtered as sheep with us; and every four persons in the family are allowed one rein-deer for their week's subsistence. In spring they spare the herd as much as they can, and live upon fresh fish. In summer, the milk and curd of the rein-deer makes their chief provision; and, in autumn, they live wholly upon fowls, which they kill with a cross-bow, or catch in springs. Nor is this so scanty an allowance; since, at that time, the sea-fowls come in such abundance that their ponds and springs are covered over. These are not so shy as with us, but yield themselves an easy prey. They are chiefly allured to those places by the swarms of gnats which infest the country during summer, and now repay the former inconveniences, by inviting such numbers of birds as supply the natives with food a fourth part of the year, in great abundance.

The milk, when newly taken, is warmed in a cauldron, and thickened with rennet; and then the curd is pressed into cheeses, which are little and well tasted. These are never found to breed mites as the cheese of other countries; probably because the mite-fly is not to be found in Lapland. The whey which remains is warmed up again, and becomes of a consistence as if thickened with the white of eggs. Upon this the Laplanders feed during the summer; it is pleasant and well tasted, but not very nourishing. As to butter, they very seldom make any, because the milk affords but a very small quantity, and this, both in taste and consistence, is more nearly resembling to suet. They never

keep their milk till it turns sours; and do not dress it into the variety of dishes which the more southern countries are known to do. The only delicacy they make from it is with wood-sorrel, which being boiled up with it, and coagulating, the whole is put into casks, or deer skins, and kept under ground to be eaten in winter.

The skin is even a more valuable part of this animal than either of the former. From that part of it which covered the head and feet, they make their strong snow-shoes, with the hair on the outside. Of the other parts they compose their garments, which are extremely warm, and which cover them all over. The hair of these also is on the outside; and they sometimes line them with the fur of the glutton, or some other warm-furred animal of that climate. These skins also serve them for beds. They spread them on each side of the fire, upon some leaves of the dwarf birch-tree, and in this manner lie both soft and warm. Many garments made of the skin of the rein-deer are sold every year to the inhabitants of the more southern parts of Europe; and they are found so serviceable in keeping out the cold, that even people of the first rank are known to wear them.

In short, no part of this animal is thrown away as useless. The blood is preserved in small casks, to make sauce with the marrow in spring. The horns are sold to be converted into glue. The sinews are dried, and divided so as to make the strongest kind of sewing thread, not unlike catgut. The tongues, which are considered as a great delicacy, are dried, and sold into the more southern provinces. The intestines themselves are washed like our tripe, and in high esteem among the natives. Thus the Laplander finds all his necessities amply supplied from this single animal; and he who has a large herd of these animals has no idea of higher luxury.

But although the rein-deer be a very hardy and vigorous animal, it is not without its diseases. I have already mentioned the pain it feels from the gnat, and the apprehensions it is under from the gadfly. Its hide is often found pierced in a hundred places, like a sieve, from this insect, and not a few die in their third year from this very cause. Their teats also are subject to cracking, so that blood comes instead of milk. They sometimes take a loathing for their food; and, instead of eating, stand still and chew the cud. They are

also troubled with a vertigo, like the elk, and turn round often till they die. The Laplander judges of their state by the manner of their turning. If they turn to the right, he judges their disorder but slight; if they turn to the left, he deems it incurable. The rein-deer are also subject to ulcers near the hoof, which unqualifies them for travelling, or keeping with the herd. But the most fatal disorder of all is, that which the natives call the *suddataka*, which attacks this animal at all seasons of the year. The instant it is seized with this disease, it begins to breathe with greater difficulty; its eyes begin to stare, and its nostrils to expand. It acquires also an unusual degree of ferocity, and attacks all it meets indiscriminately. Still, however, it continues to feed as if in health, but is not seen to chew the cud, and it lies down more frequently than before. In this manner it continues, every day consuming and growing more lean, till at last it dies from mere inanition; and not one of those that are attacked with this disorder are ever found to recover. Notwithstanding, it is but very lately known in that part of the world; although, during the last ten or fifteen years, it has spoiled whole provinces of this necessary creature. It is contagious; and the moment the Laplander perceives any of his herd infected, he hastens to kill them immediately before it spreads any further. When examined internally, there is a frothy substance found in the brain, and round the lungs; the intestines are lax and flabby, and the spleen is diminished almost to nothing. The Laplander's only cure in all these disorders is, to anoint the animal's back with tar; if this does not succeed, he considers the disease as beyond the power of art; and with his natural phlegm, submits to the severities of fortune.

Besides the natural maladies of this animal, there are some external enemies which it has to fear. The bears now and then make depredations upon the herd; but of all their persecutors, the creature called the *glutton* is the most dangerous and the most successful. The war between these is carried on not less in Lapland than in North America, where the rein-deer is called the *carribou*, and the *glutton* the *carajou*. This animal, which is not above the size of a badger, waits whole weeks together for its prey, hid in the branches of some spreading tree; and when the wild rein-deer passes underneath, it instantly drops down upon it,

fixing its teeth and claws into the neck, just behind the horns. It is in vain that the wounded animal then flies for protection, that it rustles among the branches of the forest, the glutton still holds its former position; and, although it often loses a part of its skin and flesh, which are rubbed off against the trees, yet it still keeps fast until its prey drops with fatigue and loss of blood. The deer has but one only method of escape, which is by jumping into the water: that element its enemy cannot endure; for, as we are told, it quits its hold immediately, and then thinks only of providing for its own proper security.

[Mr. Pennant has described a remarkably small kind of deer, which was brought from Bengal, and was in the possession of the late Lord Clive. Its general colour was brown; the belly and rump lighter; the horns were slender, about thirteen inches long, with a single branch at the base of each, and forked at the tips. The body, from the tip of the nose to the tail, was three feet six inches long; the tail measured eight inches; the height, from the shoulder to the hoof, was two feet two inches; behind it was about two inches higher; the legs were so fine and slender, that, like those of the pigmy antelope and musk, they were often capped with gold, and made use of as tobacco-stoppers.]

BOOK III.

*QUADRUPEDS OF THE HOG KIND.**

CHAP. I.

INTRODUCTION.

ANIMALS of the hog kind seem to unite in themselves all those distinctions by which others are separated. They resemble those of the horse kind in the number of their teeth, which, in all, amount to forty-four, in the length of their head, and in having but a single stomach. They resemble the cow kind in their cloven hoofs and the position of their intestines; and they resemble those of the claw-footed kind in their appetite for flesh, in their not chewing the cud, and in their numerous progeny. Thus this species serves to fill up that chasm which is found between the carnivorous kinds and those that live upon grass, being possessed of the ravenous appetite of the one, and the inoffensive nature of the other. We may consider them, therefore, as of a middle nature, which we can refer neither to the rapacious nor the peaceful kinds, and yet partaking somewhat of the nature of both. Like the rapacious kinds, they are found to have short intestines; their hoofs also, though cloven to the sight, will, upon anatomical inspection, appear to be supplied with bones like beasts of prey; and the number of their teats also increase the similitude: on the other hand, in a natural state they live upon vegetables, and seldom seek after animal food, except when urged by necessity. They offend no other animal of the forest, at the same time that they are furnished with arms to terrify the bravest.

* The animals of this tribe have four front teeth in the upper jaw, which converge at their points; and generally six in the lower jaw, which project. The canine teeth, or tusks, are two in each jaw; those in the upper jaw short, those in the lower jaw extending beyond the mouth. The snout is prominent, moveable, and has the appearance of having been abruptly cut off; the hoofs are cloven.

THE WILD BOAR,

WHICH is the original of all the varieties we find in this creature, is by no means so stupid, nor so filthy an animal, as that we have reduced to tameness; he is much smaller than the tame hog, and does not vary in his colour as those of the domestic kind do, but is always found of an iron gray, inclining to black; his snout is much longer than that of the tame hog, and the ears are shorter, rounder, and black; of which colour are also the feet and the tail. He roots the ground in a different manner from the common hog; for as this turns up the earth in little spots here and there, so the wild boar ploughs it up like a furrow, and does irreparable damage in the cultivated lands of the farmer. The tusks also of this animal are larger than in the tame breed, some of them being seen almost a foot long.* These, as is well known, grow from both the under and upper jaw, bent upwards circularly, and are exceedingly sharp at the points. They differ from the tusks of the elephant in this, that they never fall; and it is remarkable of all the hog kind, that they never shed their teeth as other animal are seen to do. The tusks of the lower jaw are always the most to be dreaded, and are found to give very terrible wounds.

The wild boar can properly be called neither a solitary nor a gregarious animal. The three first years the whole litter follows the sow, and the family lives in a herd together. They are then called beasts of company, and unite their common forces against the invasions of the wolf, or the more formidable beasts of prey. Upon this their principal safety, while young, depends; for, when attacked, they give each other mutual assistance, calling to each other with a very loud and fierce note; the strongest face the danger; they form a ring, and the weakest fall into the centre. In this position few ravenous beasts dare venture to attack them, but pursue the chase where there is less resistance and danger. However, when the wild boar is come to a state of maturity, and when conscious of his own superior strength, he then walks the forest alone and fearless. At that time he dreads no single creature, nor does he turn out of his way even for man himself. He does not seek danger, and he does not much seem to avoid it.

* Buffon, vol. ix. p. 147.

This animal is therefore seldom attacked, but at a disadvantage, either by numbers, or when found sleeping by moon-light. The hunting the wild boar is one of the principal amusements of the nobility in those countries where it is to be found. The dogs provided for this sport are of the slow heavy kind. Those used for hunting the stag, or the roe-buck, would be very improper, as they would too soon come up with their prey; and, instead of a chase, would only furnish out an engagement. A small mastiff is therefore chosen; nor are the hunters much mindful of the goodness of their nose, as the wild boar leaves so strong a scent, that it is impossible for them to mistake its course. They never hunt any but the largest and the oldest, which are known by their tracks. When the boar is *reared*, as is the expression for driving him from his covert, he goes slowly and uniformly forward, not much afraid, nor very far before his pursuers. At the end of every half mile, or thereabouts, he turns round, stops till the hounds come up, and offers to attack them. These, on the other hand, knowing their danger, keep off, and bay him at a distance. After they have for a while gazed upon each other with mutual animosity, the boar again slowly goes on his course, and the dogs renew their pursuit. In this manner the charge is sustained, and the chase continues till the boar is quite tired, and refuses to go any farther. The dogs then attempt to close in upon him from behind; those which are young, fierce, and unaccustomed to the chase, are generally the foremost, and often lose their lives by their ardour. Those which are older and better trained are content to wait until the hunters come up, who strike at him with their spears, and, after several blows, dispatch or disable him. The instant the animal is killed, they cut off the testicles, which would otherwise give a taint to the flesh; and the huntsmen celebrate the victory with their horns.

THE HOG,

In a natural state, is found to feed chiefly upon roots and vegetables; it seldom attacks any other animal, being content with such provisions as it procures without danger. Whatever animal happens to die in the forest, or is so wounded that it can make no resistance, becomes a prey

to the hog, who seldom refuses animal food, how putrid soever, although it is never at the pains of taking or procuring it alive. For this reason, it seems a glutton rather by accident than choice, content with vegetable food, and only devouring flesh when pressed by necessity, and when it happens to offer. Indeed, if we behold the hog in its domestic state, it is the most sordid and brutal animal in nature.* The awkwardness of its form seems to influence its appetites; and all its sensations are as gross as its shapes are unsightly. It seems possessed only of an insatiable desire of eating; and it seems to make choice only of what other animals find the most offensive. But we ought to consider, that the hog with us is in an unnatural state, and that it is in a manner compelled to feed in this filthy manner, from wanting that proper nourishment which it finds in the forest. When in a state of wildness, it is of all other quadrupeds the most delicate in the choice of what vegetables it shall feed on, and rejects a greater number than any of the rest. The cow, for instance, as we are assured by Linnæus, eats two hundred and seventy-six plants, and rejects two hundred and eighteen; the goat eats four hundred and forty-nine, and rejects a hundred and twenty-six; the sheep eats three hundred and eighty-seven, and rejects a hundred and forty-one; the horse eats two hundred and sixty-two, and rejects two hundred and twelve; but the hog, more nice in its provision than any of the former, eats but seventy-two plants, and rejects a hundred and seventy-one. The indelicacy of this animal is, therefore, rather in our apprehensions than in its nature; since we find it makes a very distinguishing choice in the quality of its food; and if it does not reject animal putrefaction, it may be because it is abridged in that food which is most wholesome and agreeable to it in a state of nature. This is certain, that its palate is not insensible to the difference of eatables; for, where it finds variety, it will reject the worst with as distinguishing a taste as any other quadruped whatsoever.† In the orchards of peach-trees in North America, where the hog has plenty of delicious

* Buffon, vol. ix. p. 14. † British Zoology, vol. i. p. 42.

food, it is observed, that it will reject the fruit that has lain but a few hours on the ground, and continue on the watch whole hours together for a fresh wind-fall.

However, the hog is naturally formed in a more imperfect manner than the other animals that we have rendered domestic around us, less active in its motions, less furnished with instinct in knowing what to pursue or avoid. Without attachment, and incapable of instruction, it continues, while it lives, an useless, or rather a rapacious, dependent. The coarseness of its hair, and the thickness of its hide, together with the thick coat of fat that lies immediately under the skin, render it insensible to blows, or rough usage. Mice have been known to burrow in the back of these animals while fattening in the sty,* without their seeming to perceive it. Their other senses seem to be in tolerable perfection; they scent the hounds at a distance; and, as we have seen, they are not insensible in the choice of their provisions.

The hog is, by nature, stupid, inactive, and drowsy; if undisturbed, it would sleep half its time; but it is frequently awaked by the calls of appetite, which when it has satisfied, it goes to rest again. Its whole life is thus a round of sleep and gluttony; and, if supplied with sufficient food, it soon grows unfit even for its own existence; its flesh becomes a greater load than its legs are able to support, and it continues to feed lying down, or kneeling, a helpless instance of indulged sensuality. The only times it seems to have passions of a more active nature, are, when it is incited by venery, or when the wind blows with any vehemence. Upon this occasion, it is so agitated as to run violently towards its sty, screaming horribly at the same time; which seems to argue that it is naturally fond of a warm climate. It appears also to foresee the approach of bad weather, bringing straw to its sty in its mouth, preparing a bed, and hiding itself from the impending storm. Nor is it less agitated when it hears any of its kind in distress: when a hog is caught in a gate, as is often the case, or when it suffers any of the usual domestic operations of ringing or spaying, all the rest are then seen to gather round it, to lend their fruitless assistance, and to sympathize with its sufferings. They have often also been

* Buffon.

known to gather round a dog that had teased them, and kill him upon the spot.

Most of the diseases of this animal arise from intemperance; measles, imposthumes, and scrofulous swellings, are reckoned among the number. It is thought by some that they wallow in the mire to destroy a sort of louse, or insect, that is often found to infest them; however, they are generally known to live, when so permitted, to eighteen or twenty years; and the females produce till the age of fifteen. As they produce from ten to twenty young at a litter, and that twice a year, we may easily compute how numerous they would shortly become, if not diminished by human industry. In the wild state they are less prolific; and the sow of the woods brings forth but once a year, probably because exhausted by rearing up her former numerous progeny.

It would be superfluous to dwell longer upon the nature and qualities of an animal too well known to need a description: there are few, even in cities, who are unacquainted with its uses, its appetites, and way of living. The arts of fattening, rearing, guarding, and managing hogs, fall more properly under the cognizance of the farmer than the naturalist; they make a branch of domestic economy, which, properly treated, may be extended to a great length; but the history of nature ought always to end where that of art begins. It will be sufficient, therefore, to observe, that the wild boar was formerly a native of our country, as appears from the laws of Hoel Dda,* the famous Welch legislator, who permitted his grand huntsman to chase that animal from the middle of November to the beginning of December. William the Conqueror also punished such as were convicted of killing the wild boar in his forests, with the loss of their eyes. At present, the whole wild breed is extinct; but no country makes greater use of the tame kinds, as their flesh, which bears salt better than that of any other animal, makes a principal part of the provisions of the British navy.

As this animal is a native of almost every country, there are some varieties found in the species. That which we call the East India breed, is lower, less furnished with hair, is

* British Zoology, vol. i. p. 44.

usually black, and has the belly almost touching the ground; it is now common in England; it fattens more easily than the ordinary kinds, and makes better bacon.

There is a remarkable variety of this animal about Upsal,* which is single-hoofed, like the horse; but in no other respect differing from the common kinds. The authority of Aristotle, who first made mention of this kind, has been often called in question; some have asserted, that such a quadruped never existed, because it happened not to fall within the sphere of their own confined observation; however, at present, the animal is too well known to admit of any doubt concerning it. The hog common in Guinea differs also in some things from our own: though shaped exactly as ours, it is of a reddish colour, with long ears, which end in a sharp point, and a tail which hangs down to the pastern; the whole body is covered with short red shining hair, without any bristles, but pretty long near the tail. Their flesh is said to be excellent, and they are very tame.

All these, from their near resemblance to the hog, may be considered as of the same species; the East Indian hog, we well know, breeds with the common kind: whether the same obtains between it, and those of Upsal and Guinea, we cannot directly affirm; but where the external similitude is so strong, we may be induced to believe that the appetites and habits are the same. It is true, we are told, that the Guinea breed will not mix with ours, but keep separate, and herd only together: however, this is no proof of their diversity, since every animal will prefer its own likeness in its mate; and they will only then mix with another sort, when deprived of the society of their own. These, therefore, we may consider as all of the hog kind; but there are other quadrupeds, that, in general, resemble this species, which, nevertheless, are very distinct from them. Travellers, indeed, from their general form, or from their habits and way of living, have been content to call these creatures hogs also; but upon a closer inspection, their differences are found to be such as entirely to separate the kinds, and make each a distinct animal by itself.

* Amænit. Acad. vol. v. p. 465.

CHAP. II.

THE PECCARY, OR TAJACU.

THAT animal which of all others most resembles the hog, and yet is of a formation very distinct from it, is called the *peccary*, or *tajacu*. It is a native of America, and found there in such numbers, that they are seen in herds of several hundreds together, grazing among the woods, and inoffensive, except when offended.

The peccary, at first view, resembles a small hog; the form of its body, the shape of its head, the length of its snout, and the form of its legs, are entirely alike: however, when we come to examine it nearer, the differences begin to appear. The body is not so bulky; its legs not so long; its bristles much thicker and stronger than those of the hog, resembling rather the quills of a porcupine than hair; instead of a tail, it has only a little fleshy protuberance, which does not even cover its posteriors; but that which is still more extraordinary, and in which it differs from all other quadrupeds whatsoever, is, that it has got upon its back a lump, resembling the navel in other animals, which is found to separate a liquor of a very strong smell. The peccary is the only creature that has those kind of glands which discharge the musky substance on that part of its body. Some have them under the belly, and others under the tail; but this creature, by a conformation peculiar to itself, has them on its back. This lump, or navel, is situated on that part of the back which is over the hinder legs; it is, in general, so covered with long bristles, that it cannot be seen, except they be drawn aside. A small space then appears, that is almost bare, and only beset with a few short fine hairs. In the middle it rises like a lump; and in this there is an orifice, into which one may thrust a common goose-quill. This hole or bag is not above an inch in depth; and round it, under the skin, are situated a number of small glands, which distil a whitish liquor, in colour and substance resembling that obtained from the civet animal. Perhaps it was this analogy, that led Dr. Tyson to say, that it smelt agreeably also, like that perfume. But this Mr. Buffon absolutely

denies; affirming, that the smell is at every time, and in every proportion, strong and offensive; and to this I can add my own testimony, if that able naturalist should want a voucher.

But, to be more particular in the description of the other parts of this quadruped; the colour of the body is grizly, and beset with bristles, thicker and stronger than those of a common hog; though not near so thick as those of a porcupine, they resemble them in this respect, that they are variegated with black and white rings. The belly is almost bare; and the short bristles on the sides gradually increase in length, as they approach the ridge of the back, where some are five inches long. On the head also, between the ears, there is a large tuft of bristles that are chiefly black. The ears are about two inches and a half long, and stand upright; and the eyes resemble those of a common hog, only they are smaller. From the lower corner of the eye to the snout, is usually six inches; and the snout itself is like that of a hog, though it is but small. One side of the lower lip is generally smooth, by the rubbing of the tusk of the upper jaw. The feet and hoofs are perfectly like those of a common hog; but, as was already observed, it has no tail. There are some anatomical differences in its internal structure from that of the common hog. Dr. Tyson was led to suppose, that it had three stomachs; whereas the hog has but one: however, in this he was deceived, as Mr. Daubenton has plainly shewn, that the stomach is only divided by two closings, which gives it the appearance as if divided into three; and there is no conformation that prevents the food in any part of it from going or returning to any other.

The peccary may be tamed like the hog, and has pretty nearly the same habits and natural inclinations. It feeds upon the same aliments; its flesh, though drier and leaner than that of the hog, is pretty good eating; it is improved by castration; and, when killed, not only the parts of generation must be taken instantly away, but also the navel on the back, with all the glands that contribute to its supply. If this operation be deferred for only half an hour, the flesh becomes utterly unfit to be eaten.

The peccary is extremely numerous in all the parts of Southern America. They go in herds of two or three hun-

dred together; and unite, like hogs, in each other's defence. They are particularly fierce when their young are attempted to be taken from them. They surround the plunderer, attack him without fear, and frequently make his life pay the forfeit of his rashness. When any of the natives are pursued by a herd in this manner, they frequently climb a tree to avoid them; while the peccaries gather round the root, threaten with their tusks, and their rough bristles standing erect, as in the hog kind, they assume a very terrible appearance. In this manner they remain at the foot of the tree for hours together; while the hunter is obliged to wait patiently, and not without apprehensions, until they think fit to retire.

The peccary is rather fond of the mountainous parts of the country, than the lowlands; it seems to delight neither in the marshes nor the mud, like our hogs; it keeps among the woods, where it subsists upon wild fruits, roots, and vegetables; it is also an unceasing enemy to the lizard, the toad, and all the serpent kinds, with which these uncultivated forests abound. As soon as it perceives a serpent, or a viper, it at once seizes it with its fore-hoofs and teeth, skins it in an instant, and devours the flesh. This is often seen, and may therefore be readily credited; but as to its applying to a proper vegetable immediately after, as an antidote to the poison of the animal it had devoured, this part of the relation we may very well suspect. The flesh neither of the toad nor viper, as every one now knows, are poisonous; and, therefore, there is no need of a remedy against their venom. Ray gives no credit to either part of the account; however, we can have no reason to disbelieve that it feeds upon toads and serpents; it is only the making use of a vegetable antidote that appears improbable, and which perhaps had its rise in the ignorance and credulity of the natives.

The peccary, like the hog, is very prolific; the young ones follow the dam, and do not separate till they have come to perfection. If taken at first, they are very easily tamed, and soon lose all their natural ferocity; however, they never shew any remarkable signs of docility, but continue stupid and rude, without attachment, or even seeming to know the hand that feeds them. They only continue to do no mischief; and they may be permitted to run tame, without apprehend-

ing any dangerous consequences. They seldom stray far from home; they return of themselves to the sty; and do not quarrel among each other, except when they happen to be fed in common. At such times they have an angry kind of growl, much stronger and harsher than that of a hog; but they are seldom heard to scream as the former; only now and then, when frighted or irritated, they have an abrupt angry manner of blowing, like the boar.

The peccary, though like the hog in so many various respects, is, nevertheless, a very distinct race, and will not mix, nor produce an intermediate breed. The European hog has been transplanted into America, and suffered to run wild among the woods; it is often seen to herd among a drove of peccaries, but never to breed from them. They may, therefore, be considered as two distinct creatures: the hog is the larger and the more useful animal; the peccary, more feeble and local; the hog subsists in most parts of the world, and in almost every climate; the peccary is a native of the warmer regions, and cannot subsist in ours without shelter and assistance. It is more than probable, however, that we could readily propagate the breed of this quadruped; and that, in two or three generations, it might be familiarized to our climate; but as it is inferior to the hog in every respect, so it would be needless to admit a new domestic, whose services are better supplied in the old.

CHAP. III.

THE CAPIBARA, OR CABIAI.

There are some quadrupeds so entirely different from any that we are acquainted with, that it is hard to find a well known animal to which to resemble them. In this case, we must be content to place them near such as they most approach in form and habits, so that the reader may at once have some idea of the creature's shape or disposition, although, perhaps, an inadequate and a very confused one.

Upon that confused idea, however, it will be our business to work; to bring it, by degrees, to greater precision; to mark out the differences of form, and thus give the

clearest notions that words can easily convey. The known animal is a kind of rude sketch of the figure we want to exhibit; from which, by degrees, we fashion out the shape of the creature we desire should be known; as a statuary seldom begins his work, till the rude outline of the figure is given by some other hand.—In this manner, I have placed the capibara among the hog kind, merely because it is more like a hog than any other animal commonly known; and yet, more closely examined, it will be found to differ in some of the most obvious particulars.

The capibara resembles a hog of about two years old, in the shape of its body, and the coarseness and colour of its hair. Like the hog, it has a thick short neck, and a rounded bristly back; like the hog, it is fond of the water and marshy places, brings forth many at a time, and like it feeds upon animal and vegetable food. But when examined more nearly, the differences are many and obvious. The head is longer, the eyes are larger, and the snout, instead of being rounded, as in the hog, is split like that of a rabbit or hare, and furnished with thick strong whiskers; the mouth is not so wide, the number and the form of the teeth are different, for it is without tusks: like the peccary, it wants a tail; and, unlike to all others of this kind, instead of a cloven hoof, it is in a manner web-footed, and thus entirely fitted for swimming, and living, in the water. The hoofs before are divided into four parts; and those behind into three; between the divisions, there is a prolongation of the skin, so that the foot, when spread in swimming, can beat a greater surface of water.

As its feet are thus made for the water, so it is seen to delight entirely in that element; and some naturalists have called it the *water-hog* for that reason. It is a native of South America, and is chiefly seen frequenting the borders of lakes and rivers, like the otter. It seizes the fish, upon which it preys, with its hoofs and teeth, and carries them to the edge of the lake, to devour them at its ease. It lives also upon fruits, corn, and sugar-canes. As its legs are long and broad, it is often seen sitting up like a dog that is taught to beg. Its cry more nearly resembles the braying of an ass, than the grunting of a hog. It seldom goes out, except at night, and that always in company. It never ventures far from the sides of the river or the lake in which it preys; for

as it runs ill, because of the length of its feet, and the shortness of its legs, so its only place of safety is the water, into which it immediately plunges when pursued, and keeps so long at the bottom, that the hunter can have no hopes of taking it there. The capibara, even in a state of wildness, is of a gentle nature, and when taken young is easily tamed. It comes and goes at command, and even shews an attachment to its keeper. Its flesh is said to be fat and tender, but, from the nature of its food, it has a fishy taste, like that of all those which are bred in the water. Its head, however, is said to be excellent; and in this it resembles the beaver, whose fore-parts taste like flesh, and the hinder like the fish it feeds on.

CHAP. IV.

THE BABYROUESSA, OR INDIAN HOG.

The Babyrouessa is still more remote from the hog kind than the capibara; and yet most travellers who have described this animal, do not scruple to call it the hog of Borneo, which is an island in the East Indies, where it is principally to be found. Probably this animal's figure, upon the whole, most resembles that of the hog kind, and may have induced them to rank it among the number; however, when they come to its description, they represent it as having neither the hair, the bristles, the head, the stature, nor the tail, of a hog. Its legs, we are told, are longer, its snout shorter, its body more slender, and somewhat resembling that of a stag; its hair is finer, of a gray colour, rather resembling wool than bristles, and its tail also tufted with the same. From these varieties, therefore, it can scarcely be called a hog; and yet in this class we must be content to rank it, until its form and nature come to be better known. What we at present principally distinguish it by, are four enormous tusks, that grow out of the jaws; the two largest from the upper, and the two smallest from the under. The jaw-bones of this extraordinary animal are found to be very thick and strong; from whence these monstrous tusks are seen to proceed, that distinguish it from all other quadrupeds whatsoever. The two

that go from the lower jaw are not above a foot long, but those of the upper are above half a yard; as in the boar, they bend circularly, and the two lower stand in the jaw as they are seen to do in that animal; but the two upper rise from the upper jaw, rather like horns than teeth; and, bending upwards and backwards, sometimes have their points directed to the animal's eyes, and are often fatal by growing into them. Were it not that the babyrouessa has two such large teeth underneath, we might easily suppose the two upper to be horns; and, in fact, their sockets are directed upwards; for which reason, Dr. Grew was of that opinion. But as the teeth of both jaws are of the same consistence, and as they both grow out of sockets in the same manner, the analogy between both is too strong not to suppose them of the same nature. The upper teeth, when they leave the socket, immediately pierce the upper lips of the animal, and grow as if they immediately went from its cheek. The tusks in both jaws are of a very fine ivory, smoother and whiter than that of the elephant, but not so hard or serviceable.

These enormous tusks give this animal a very formidable appearance; and yet it is thought to be much less dangerous than the wild boar.* Like animals of the hog kind, they go together in a body, and are often seen in company with the wild boar, with which, however, they are never known to engender. They have a very strong scent, which discovers them to the hounds; and when pursued they growl dreadfully, often turning back upon the dogs, and wounding them with the tusks of the lower jaw, for those of the upper are rather an obstruction than a defence. They run much swifter than the boar, and have a more exquisite scent, winding the men and the dogs at a great distance. When hunted closely, they generally plunge themselves into the sea, where they swim with great swiftness and facility, diving and rising again at pleasure; and in this manner they most frequently escape their pursuers. Although fierce and terrible when offended, yet they are peaceable and harmless when unmolested. They are easily tamed, and their flesh is good to be eaten; but it is said to putrefy in a very short time. They have a way of reposing themselves different from most other animals of the larger kind; which is by hitching one of their upper tusks on the branch of a tree, and then suffering their whole body

* Buffon, vol. xxv. p. 179.

to swing down at ease. Thus suspended from a tooth, they continue the whole night quite secure, and out of the reach of such animals as hunt them for prey.

The babyrouessa, though by its teeth and tusks it seems fitted for a state of hostility, and probably is carnivorous, yet, nevertheless, seems chiefly to live upon vegetables and the leaves of trees. It seldom seeks to break into gardens, like the boar, in order to pillage the more succulent productions of human industry, but lives remote from mankind, content with coarser fare and security. It has been said, that it was only to be found in the island of Borneo; but this is a mistake, as it is well known in many other parts both of Asia and Africa, as at the Celebes, at Estrila, Senegal and Madagascar.*

Such are the animals of the hog kind, which are not distinctly known; and even all these, as we see, have been but imperfectly examined or described. There are some others of which we have still more imperfect notices; such as the warree, a hog of the Isthmus of Darien, described by Wafer, with large tusks, small ears, and bristles like a coarse fur all over the body. This, however, may be the European hog, which has run wild in that part of the new world, as no other traveller has taken notice of the same. The Canary boar seems different from other animals of this kind, by the largeness of its tusks; and, as is judged from the skeleton, by the aperture of its nostrils, and the number of its grinders. I cannot conclude this account of those animals that are thus furnished with enormous tusks, without observing that there is a strong consent between these and the parts of generation. When castrated, it is well known that the tusks grow much smaller, and are scarcely seen to appear without the lips; but what is still more remarkable is, that in a boar, if the tusks by any accident or design be broken away, the animal abates of its fierceness and venery, and it produces nearly the same effect upon its constitution as if castration had actually taken place.†

* Anderson's Natural History of Greenland.

† Lisle's Husbandry, vol. ii. p. 329.

BOOK IV.

CARNIVOROUS ANIMALS.

CHAP. I.

ANIMALS OF THE CAT KIND.*

WE have hitherto been describing a class of peaceful and harmless animals, that serve as the instruments of man's happiness, or, at least, that do not openly oppose him. We come now to a bloody and unrelenting tribe, that disdain to own his power, and carry on unceasing hostilities against him. All the class of the cat kind are chiefly distinguished by their sharp and formidable claws, which they can hide and extend at pleasure. They lead a solitary ravenous life, neither uniting for their mutual defence, like vegetable feeders, nor for their mutual support, like those of the dog kind. The whole of this cruel and ferocious tribe seek their food alone; and, except at certain seasons, are even enemies to each other. The dog, the wolf, and the bear, are sometimes known to live upon vegetables or farinaceous food; but all of the cat kind, such as the lion, the tiger, the leopard, and the ounce, devour nothing but flesh, and starve upon any other provision.

They are, in general, fierce, rapacious, subtle, and cruel, unfit for society among each other, and incapable of adding to human happiness. However, it is probable that even the fiercest could be rendered domestic, if man thought the conquest worth the trouble. Lions have been yoked to the chariots of conquerors, and tigers have been taught to tend those herds which they are known at present to destroy; but

* The quadrupeds of this family are distinguished by having six front teeth, the intermediate ones of which are equal; the grinders are three on each side in each jaw; the tongue is furnished with rough prickles pointing backwards; and the claws are sheathed and retractile, except in the lion, which has them retractile, but not sheathed.

these services are not sufficient to recompense for the trouble of their keeping; so that ceasing to be useful, they continue to be noxious, and become rebellious subjects, because not taken under equal protection with the rest of the brute creation.

Others tribes of animals are classed with difficulty; have often but few points of resemblance; and, though alike in form, have different dispositions, and different appetites. But all those of the cat kind, although differing in size, or in colour, are yet nearly allied to each other; being equally fierce, rapacious, and artful; and he that has seen one has seen all. In other creatures there are many changes wrought by human assiduity; the dog, the hog, or the sheep, are altered in their natures and forms, just as the necessities, or the caprice of mankind, have found fitting; but all of this kind are inflexible in their forms, and wear the print of their natural wildness strong upon them. The dogs or cows vary in different countries, but lions or tigers are still found the same; the very colour is nearly alike in all; and the slightest alterations are sufficient to make a difference in the kinds, and to give the animal a different denomination.

The cat kind are not less remarkable for the sharpness and strength of their claws, which thrust forth from their sheath when they seize their prey, than for the shortness of their snout, the roundness of their head, and the large whiskers which grow on the upper lip. Their teeth also, which amount to the number of thirty, are very formidable, but rather calculated for tearing their prey than for chewing it: for this reason they feed but slowly; and while they eat, generally continue growling, to deter others from taking a share. In the dog kind, the chief power lies in the under jaw, which is long, and furnished with muscles of amazing strength; but in these the greatest force lies in the claws, which are extended with great ease, and their gripe is so tenacious that nothing can open it. The hinder parts in all these animals are much weaker than those before; and they seem less made for strength than agility. Nor are they endued with the swiftness of most other animals; but generally owe their subsistence rather to catching their prey by surprise than by hunting it fairly down. They all seize it with a bound, at the same time expressing their fierce pleasure with a roar; and the first grasp generally disables the

captive from all further resistance. With all these qualifications for slaughter, they, nevertheless, seem timid and cowardly, and seldom make an attack, like those of the dog kind, at a disadvantage: on the contrary, they fly when the force against them is superior, or even equal to their own; and the lion himself will not venture to make a second attempt, where he has once been repulsed with success. For this reason, in countries that are tolerably inhabited, the lion is so cowardly, that he is often scared away by the cries of women and children.

The cat, which is the smallest animal of this kind, is the only one that has been taken under human protection, and may be considered as a faithless friend, brought to oppose a still more insidious enemy.* It is, in fact, the only animal of this tribe whose services can more than recompense the trouble of their education, and whose strength is not sufficient to make its anger formidable. The lion, or the tiger, may easily be tamed, and rendered subservient to human command; but even in their humblest, and most familiar moments, they are still dangerous; since their strength is such, that the smallest fit of anger or caprice may have dreadful consequences. But the cat, though easily offended, and often capricious in her resentments, is not endowed with powers sufficient to do any great mischief. Of all animals, when young, there is none more prettily playful than the kitten; but it seems to lose this disposition as it grows old, and the innate treachery of its kind is then seen to prevail. From being naturally ravenous, education teaches it to disguise its appetites, and to watch the favourable moment of plunder; supple, insinuating, and artful, it has learned the arts of concealing its intentions till it can put them into execution; when the opportunity offers, it at once seizes upon whatever it finds, flies off with it, and continues at a distance till it supposes its offence forgotten. The cat has only the appearance of attachment; and it may easily be perceived, by its timid approaches, and side-long looks, that it either dreads its master, or distrusts his kindness; different from the dog, whose caresses are sincere, the cat is assiduous rather for its own pleasure, than to please; and often gains confidence only to

* This description is nearly translated from Mr Buffon: what I have added is marked with inverted commas.

abuse it. The form of its body, and its temperament, correspond with its disposition; active, cleanly, delicate, and voluptuous, it loves its ease, and seeks the softest cushions to lie on. "Many of its habits, however, are rather the consequences of its formation, than the result of any perverseness in its disposition; it is timid and mistrustful, because its body is weak, and its skin tender; a blow hurts it infinitely more than it does a dog, whose hide is thick, and body muscular; the long fur in which the cat is clothed entirely disguises its shape, which, if seen naked, is long, feeble, and slender; it is not to be wondered, therefore, that it appears much more fearful of chastisement than the dog, and often flies even when no correction is intended. Being also a native of the warmer climates, as will be shewn hereafter, it chooses the softest bed to lie on, which is always the warmest."

The cat goes with young fifty-six days, and seldom brings forth above five or six at a time. The female usually hides the place of her retreat from the male, who is often found to devour her kittens. She feeds them for some weeks with her milk, and whatever small animals she can take by surprise, accustoming them betimes to rapine. Before they are a year old, they are fit to engender; the female seeks the male with cries; nor is their copulation performed without great pain, from the narrowness of the passage in the female. They live to about the age of ten years; and during that period they are extremely vivacious, suffering to be worried a long time before they die.

The young kittens are very playful and amusing; but their sport soon turns into malice, and they, from the beginning, shew a disposition to cruelty; they often look wistfully towards the cage, sit centinels at the mouth of a mouse-hole, and in a short time become more expert hunters than if they had received the instructions of art. Indeed, their disposition is so incapable of constraint, that all instruction would be but thrown away. It is true, that we are told of the Greek monks of the isle of Cyprus teaching cats to hunt the serpents with which the island is infested; but this may be natural to the animal itself, and they might have fallen upon such a pursuit without any instruction. Whatever animal is much weaker than themselves, is to them an indiscriminate object of destruc-

tion. Birds, young rabbits, hares, rats, and mice, bats, moles, toads, and frogs, are all equally pursued; though not, perhaps, equally acceptable. The mouse seems to be their favourite game; and, although the cat has the sense of smelling in but a mean degree, it, nevertheless, knows those holes in which its prey resides. I have seen one of them patiently watch a whole day until the mouse appeared, and continue quite motionless until it came within reach, and then seized it with a jump. Of all the marks by which the cat discovers its natural malignity, that of playing and sporting with its little captive, before killing it outright, is the most flagrant.

The fixed inclination which they discover for this peculiar manner of pursuit, arises from the conformation of their eyes. The pupil in man, and in most other animals, is capable but of a small degree of contraction and dilatation, it enlarges a little in the dark, and contracts when the light pours in upon it in too great quantities. In the eyes of cats, however, this contraction and dilatation of the pupil is so considerable, that the pupil, which by day-light appears narrow and small like the black of one's nail, by night expands over the whole surface of the eye-ball, and, as every one must have seen, their eyes seem on fire. By this peculiar conformation, their eyes see better in darkness than light; and the animal is thus better adapted for spying out and surprising its prey.

Although the cat is an inhabitant of our houses, yet it cannot properly be called a dependent; although perfectly tame, yet it acknowledges no obedience; on the contrary, it does only just what it thinks fit, and no art can control any of its inclinations. In general, it is but half tamed; and has its attachments rather to the place in which it resides, than to the inhabitant. If the inhabitant quits the house, the cat still remains; and if carried elsewhere, seems for a while bewildered with its new situation. It must take time to become acquainted with the holes and retreats in which its prey resides, with all the little labyrinths through which they often make good an escape.

The cat is particularly fearful of water, of cold, and of ill smells. It loves to keep in the sun, to get near the fire, and to rub itself against those who carry perfumes. It is excessively fond of some plants, such as valerian, marum,

and cat-mint: against these it rubs, smells them at a distance, and, at last, if they be planted in a garden, wears them out.

This animal eats slowly, and with difficulty, as its teeth are rather made for tearing, than chewing its aliments. For this reason it loves the most tender food, particularly fish, which it eats as well boiled as raw. Its sleeping is very light; and it often seems to sleep, the better to deceive its prey. When the cat walks, it treads very softly, and without the least noise; and as to the necessities of nature, it is cleanly to the last degree. Its fur also is usually sleek and glossy; and, for this reason, the hair is easily electrified, sending forth shining sparks, if rubbed in the dark.

"The wild cat breeds with the tame;* and, therefore, the latter may be considered only as a variety of the former: however, they differ in some particulars; the cat, in its savage state, is somewhat larger than the house-cat; and its fur being longer, gives it a greater appearance than it really has; its head is bigger, and face flatter; the teeth and claws much more formidable; its muscles very strong, as being formed for rapine; the tail is of a moderate length, but very thick and flat, marked with alternate bars of black and white, the end always black; the hips and hind part of the lower joints of the leg, are always black; the fur is very soft and fine: the general colour of these animals, in England, is a yellowish white, mixed with a deep gray. These colours, though they appear at first sight confusedly blended together, yet, on a close inspection, will be found to be disposed like the streaks on the skin of the tiger, pointing from the back downwards, rising from a black list, that runs from the head, along the middle of the back, to the tail. This animal is found in our larger woods; and is the most destructive of the carnivorous kinds in this kingdom. It inhabits the most mountainous and woody parts of these islands, living mostly in trees, and feeding only by night. It often happens, that the females of the tame kind go into the woods to seek mates among the wild ones. It should seem, that these, however, are not original inhabitants of this kingdom, but were introduced first in a domestic state, and afterwards became wild in the woods, by

* British Zoology.

ill usage or neglect. Certain it is, the cat was an animal much higher in esteem among our ancestors than it is at present. By the laws of Howel, the price of a kitten, before it could see, was to be a penny; till it caught a mouse, two-pence; and when it commenced mouser, four-pence: it was required, besides, that it should be perfect in its senses of hearing and seeing, be a good mouser, have the claws whole, and be a good nurse. If it failed in any of these qualities, the seller was to forfeit to the buyer the third part of its value. If any one stole or killed the cat that guarded the prince's granary, he was to forfeit a milch ewe, its fleece and lamb, or as much wheat as when poured on the cat, suspended by the tail, (the head touching the floor,) would form a heap high enough to cover the tip of the former. From hence we discover, besides a picture of the simplicity of the times, a strong argument that cats were not naturally bred in our forests. An animal that could have been so easily taken, could never have been rated so highly; and the precautions laid down to improve the breed, would have been superfluous, in a creature that multiplies to such an amazing degree.

"In our climate, we know but of one variety of the wild cat; and, from the accounts of travellers, we learn, that there are but very few differences in this quadruped in all parts of the world. The greatest difference, indeed, between the wild and the tame cat, is rather to be found internally than in their outward form. Of all other quadrupeds, the wild cat is, perhaps, that whose intestines are proportionably the smallest and the shortest. The intestines of the sheep, for instance, unravelled out, and measured according to their length, will be found to be above thirty times the length of its body; whereas the wild cat's intestines being measured out, will not be found above three times the length of its body. This is a surprising difference; but we may account for it, from the nature of the food in the two animals: the one living upon vegetables, which require a longer, and a more tedious preparation, before they can become a part of its body; the other living upon flesh, which requires very little alteration, in order to be assimilated into the substance of the creature that feeds upon it. The one, therefore, wanted a long canal for properly digesting and straining its food;

the other but a short one, as the food is already prepared to pass the usual secretions: however, a difficulty still remains behind; the intestines of the wild cat are, by one-third, shorter than those of the tame. How can we account for this? If we say that the domestic cat, living upon more nourishing and more plentiful provision, has its intestines enlarged to the quantity with which it is supplied, we shall find this observation contradicted in the wild boar and the wolf, whose intestines are as long as those of the hog or the dog, though they lead a savage life, and, like the wild cat, are fed by precarious subsistence. The shortness, therefore, of the wild cat's intestines, is still unaccounted for; and most naturalists consider the difficulty as inexplicable. We must leave it, therefore, as one of those difficulties which future observation or accident are most likely to discover."

This animal is one of those few which are common to the new continent, as well as the old. When Christopher Columbus first discovered that country, a hunter brought him one, which he had discovered in the woods: it was of the ordinary size, the tail very long and thick. They were common also in Peru, although they were not rendered domestic. They are well known also in several parts of Africa, and many parts of Asia. In some of these countries they are of a peculiar colour, and inclining to blue. In Persia, Pietro della Valle informs us, that there is a kind of cat, particularly in the province of Chorazan, of the figure and form of the ordinary one, but infinitely more beautiful in the lustre and colour of its skin. It is of a gray blue, without mixture, and as soft and shining as silk. The tail is very long, and covered with hair six inches long, which the animal throws upon its back, like the squirrel. These cats are well known in France; and have been brought over into England, under the name of the *blue cat*, which, however, is not their colour.

Another variety of this animal is called by us the *lion cat;* or, as others more properly term it, the *cat of Angora*. These are larger than the common cat, and even than the wild one. Their hair is much longer, and hangs about their head and neck, giving this creature the appearance of a lion. Some of these are white, and others of a dun colour. These come from Syria and Persia, two countries which





1. THE LION. 2. THE LIONESS.

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are noted for giving a long soft hair to the animals which are bred in them. The sheep, the goats, the dogs, and the rabbits, of Syria, are all remarkable for the fine glossy length and softness of their hair; but particularly the cat, whose nature seems to be so inflexible, conforms to the nature of the climate and soil, loses its savage colour, which it preserves almost in every other part of the world, and assumes the most beautiful appearance. There are some other varieties in this animal, but rather in colour than in form; and, in general, it may be remarked, that the cat, when carried into other countries, alters but very little, still preserving its natural manners, habits, and conformation.

THE LION.

THE influence of climate upon mankind is very small;* he is found to subsist in all parts of the earth, as well under the frozen poles, as beneath the torrid zone; but in animals, the climate may be considered as congenial, and a kind of second nature. They almost all have their particular latitudes, beyond which they are unable to subsist; either perishing with a moderate cold, or dying for want of a frozen air, even in a temperate climate. The rein-deer is never seen to depart from the icy fields of the north; and, on the contrary, the lion degenerates, when taken from beneath the line. The whole earth is the native country of man; but all inferior animals have each their own peculiar districts.

Most terrestrial animals are found larger, fiercer, and stronger, in the warm, than in the cold or temperate climates. They are also more courageous and enterprising; all their dispositions seeming to partake of the ardour of their native soil. The lion produced under the burning sun of Africa, is of all others the most terrible, the most undaunted. The wolf or the dog, instead of attempting to rival him, scarce deserve to attend his motions, or become his providers. Such, however, of these animals, as are bred in a more temperate climate, or towards the tops of cold and lofty mountains, are far more gentle, or, to speak

* This description is principally taken from Mr. Buffon: such parts as are added from others, I have marked with inverted commas.

more properly, far less dangerous than those bred in the torrid valleys beneath. The lions of Mount Atlas, the tops of which are covered in eternal snows, have neither the strength nor the ferocity of the lions of Bildulgerid or Zaara, where the plains are covered with burning sands. It is particularly in these frightful deserts, that those enormous and terrible beasts are found, that seem to be the scourge and the terror of the neighbouring kingdoms. Happily, indeed, the species is not very numerous; and it seems to be diminishing daily: for those who have travelled through these countries, assure us, that there are by no means so many there at present, as were known formerly; and Mr. Shaw observes, that the Romans carried fifty times as many lions from Lybia, in one year, to combat in their amphitheatres, as are to be found in the whole country at this time. The same remark is made with regard to Turkey, to Persia, and the Indies; where the lions are found to diminish in their numbers every day. Nor is it difficult to assign the cause of this diminution: it is obvious that it cannot be owing to the increase of the force of other quadrupeds, since they are all inferior to the lion, and, consequently, instead of lessening the number, only tend to increase the supplies on which they subsist; it must, therefore, be occasioned by the increase of mankind, who is the only animal in nature capable of making head against these tyrants of the forest, and preventing their increase. The arms even of a Hottentot or a Negro make them more than a match for this powerful creature; and they seldom make the attack, without coming off victorious. Their usual manner is to find out his retreat, and, with spears headed with iron, to provoke him to the combat: four men are considered as sufficient for this encounter; and he against whom the lion flies, receives him upon his spear, while the others attack him behind: the lion, finding himself wounded in the rear, turns that way, and thus gives the man he first attacked an opportunity to recover. In this manner they attack him on all sides; until, at last, they entirely disable, and then dispatch him. This superiority in the numbers, and the arts of man, that are sufficient to conquer the lion, serve also to enervate and discourage him; for he is brave only in proportion to the success of his former encounters.

In the vast deserts of Zaara, in the burning sands that lie between Mauritania and Negroland, in the uninhabited countries that lie to the north of Caffraria, and, in general, in all the deserts of Africa, where man has not fixed his habitation, the lions are found in great numbers, and preserve their natural courage and force. Accustomed to measure their strength with every animal they meet, the habit of conquering renders them intrepid and terrible. Having never experienced the dangerous arts and combinations of man, they have no apprehensions from his power. They boldly face him, and seem to brave the force of his arms. Wounds rather serve to provoke their rage, than repress their ardour. They are not daunted even with the opposition of numbers; a single lion of the desert often attacks an entire caravan; and, after an obstinate combat, when he finds himself overpowered, instead of flying, he continues to combat, retreating, and still facing the enemy till he dies. On the contrary, the lions which inhabit the peopled countries of Morocco or India, having become acquainted with human power, and experienced man's superiority, have lost all their courage, so as to be scared away with a shout; and seldom attack any but the unresisting flocks or herds, which even women and children are sufficient to protect.

This alteration in the lion's disposition sufficiently shews that he might easily be tamed, and admit of a certain degree of education. "In fact, nothing is more common than for the keepers of wild beasts to play with this animal, to pull out his tongue, and even to chastise him without a cause. He seems to bear it all with the utmost composure; and we very rarely have instances of his revenging these unprovoked sallies of impertinent cruelty. However, when his anger is at last excited, the consequences are terrible. Labat tells us of a gentleman who kept a lion in his chamber, and employed a servant to attend it; who, as is usual, mixed his blows with caresses. This ill-judged association continued for some time; till one morning the gentleman was awakened by a noise in his room, which, at first, he could not tell the cause of; but, drawing the curtains, he perceived a horrid spectacle; the lion growling over the man's head, which he had separated from the body, and tossing it round the floor. He

immediately, therefore, flew into the next room, called to the people without, and had the animal secured from doing further mischief." However, this single account is not sufficient to weigh against the many instances we every day see of this creature's gentleness and submission. He is often bred up with other domestic animals, and is seen to play innocently and familiarly among them; and, if ever it happens that his natural ferocity returns, it is seldom exerted against his benefactors. As his passions are strong, and his appetites vehement, one ought not to presume that the impressions of education will always prevail; so that it would be dangerous in such circumstances to suffer him to remain too long without food, or to persist in irritating and abusing him: however, numberless accounts assure us that his anger is noble, his courage magnanimous, and his disposition grateful. He has been often seen to despise contemptible enemies, and pardon their insults, when it was in his power to punish them. He has been seen to spare the lives of such as were thrown to be devoured by him, to live peaceably with them, to afford them a part of his subsistence, and sometimes to want food himself rather than deprive them of that life which his generosity had spared.

It may also be said that the lion is not cruel, since he is so only from necessity, and never kills more than he consumes. When satiated, he is perfectly gentle; while the tiger, the wolf, and all the inferior kinds, such as the fox, the pole-cat, and the ferret, kill without remorse, are fierce without cause, and, by their indiscriminate slaughter, seem rather to satisfy their malignity than their hunger.

The outward form of the lion seems to speak his internal generosity. His figure is striking, his look confident and bold, his gait proud, and his voice terrible. His stature is not overgrown, like that of the elephant or rhinoceros; nor is his shape clumsy, like that of the hippopotamos or the ox. It is compact, well proportioned, and sizeable; a perfect model of strength joined with agility. It is muscular and bold, neither charged with fat nor unnecessary flesh. It is sufficient but to see him in order to be assured of his superior force. His large head surrounded with a dreadful mane; all those muscles that appear under the skin swelling with the slightest exertions; and the great

breadth of his paws, with the thickness of his limbs, plainly evince that no other animal in the forest is capable of opposing it. He has a very broad face, that, as some have imagined, resembles the human. It is surrounded with very long hair, which gives it a very majestic air. The top of the head, the temples, the cheeks, the under-jaw, the neck, the breast, the shoulder, the hinder part of the legs, and the belly, are furnished with it, while all the rest of the body is covered with very short hair, of a tawny colour. "The length of the hair in many parts, and the shortness of it in others, serves a good deal to disguise this animal's real figure. The breast, for instance, appears very broad, but in reality it is as narrow and contracted in proportion as that of the generality of dogs and horses. For the same reason, the tail seems to be of an equal thickness from one end to the other, on account of the inequality of the hair with which it is encompassed; it being shorter near the insertion, where the flesh and bones are large, and growing longer in proportion as its real thickness lessens towards the point, where it ends in a tuft. The hair about the neck and the breast is not different from that on the rest of the body, except in the length of it; nor is each hair pointed, as in most other animals, but of an equal thickness from one end to the other. The neck is very strong, but not composed of one solid bone, as Aristotle has imagined; on the contrary, though very short and muscular, it has as many bones as the camel or the horse; for it is universal to all quadrupeds to have seven joints in the neck; and not one of them have either more or less. However, the muscles in the neck of the lion, that tie the bones together, are extremely strong, and have somewhat the appearance of bones; so that ancient authors, who have treated of this animal, have mistaken the whole for a single bone. The tongue is rough, and beset with prickles as hard as a cat's claws; these have the grain turned backwards; so that it is probable a lion, if it should attempt to lick a man's hand, as we are told it sometimes does, would tear off the skin. The eyes are always bright and fiery; nor even in death does this terrible look forsake them. In short, the structure of the paws, teeth, eyes, and tongue, are the same as in a cat; and also in the inward parts these two animals so nearly

resemble each other, that the anatomist's chief distinction arises merely from the size."

The lion has, as was observed before, a large mane, which grows every year longer as the animal grows older: the lioness is without this ornament at every age. This mane is not coarse or rough as in a horse, but composed of the same hair with the rest of the body, lengthened and shining. The mane, as well as the rest of the body, is of a yellow colour; nor is there ever any difference to be found in the colour of one lion from that of another. What the ancients might have said concerning black lions, or white, or streaked like the tiger, is not confirmed by modern experience; so that these varieties have never been seen, or exist no longer.

It is usually supposed that the lion is not possessed of the sense of smelling in such perfection as most other animals. It is also observed, that too strong a light greatly incommodes him. This is more than probable from the formation of his eyes, which, like those of the cat, seem fitted for seeing best in the dark. For this reason he seldom appears in open day, but ravages chiefly by night; and not only the lion, but all other animals of the cat kind, are kept off by the fires which the inhabitants light to preserve their herds and flocks; the brightness of the flame dazzles their eyes, which are only fitted for seeing in the dark; and they are afraid to venture blindly into those places which they know to be filled with their enemies. "It is equally true of all this kind, that they hunt rather by the sight than the smell: and it sometimes happens that the lion pursues either the jackal or the wild dog, while they are hunting upon the scent; and, when they have run the beast down, he comes in, and monopolizes the spoil. From hence, probably, may have arisen the story of the lion's provider: these little industrious animals may often, it is true, provide a feast for the lion; but they have hunted merely for themselves, and he is an unwelcome intruder upon the fruits of their toil."

The lion, when hungry, boldly attacks all animals that come in his way; but as he is very formidable, and as they all seek to avoid him, he is often obliged to hide, in order to take them by surprise. For this purpose he crouches on his belly, in some thicket, or among the long grass, which is

found in many parts of the forest; in this retreat he continues, with patient expectation, until his prey comes within a proper distance, and he then springs after it, fifteen or twenty feet from him, and often seizes it at the first bound. If he misses the effort, and in two or three reiterated springs cannot seize his prey, he continues motionless for a time, seems to be very sensible of his disappointment, and waits for a more successful opportunity. In the deserts and forests, his most usual prey are the gazelles and the monkeys, with which the torrid regions abound. The latter he takes when they happen to be upon the ground, for he cannot climb trees like the cat or the tiger. He devours a great deal at a time, and generally fills himself for two or three days to come. His teeth are so strong that he very easily breaks the bones, and swallows them with the rest of the body. It is reported that he sustains hunger a very long time, but thirst he cannot support in an equal degree, his temperament being extremely hot; some have even asserted that he is in a continual fever. He drinks as often as he meets with water, lapping it like a cat; which, as we know, drinks but slowly. He generally requires about fifteen pounds of raw flesh in a day; he prefers that of live animals, and particularly those which he has just killed. He seldom devours the bodies of animals when they begin to putrify; and he chooses rather to hunt for a fresh spoil, than to return to that which he had half devoured before. However, though he usually feeds upon fresh provision, his breath is very offensive, and his urine insupportable.

The roaring of the lion is so loud, that when it is heard in the night, and re-echoed by the mountains, it resembles distant thunder. This roar is his natural note; for when enraged he has a different growl, which is short, broken, and reiterated. The roar is a deep hollow growl, which he sends forth five or six times a day, particularly before rains. The cry of anger is much louder and more formidable. This is always excited by opposition; and upon those occasions, when the lion summons up all his terrors for the combat, nothing can be more terrible. He then lashes his sides with his long tail, which alone is strong enough to lay a man level. He moves his mane in every direction; it seems to rise and stand like bristles round his head; the skin and muscles of his face are all in agitation; his huge eye-brows

half cover his glaring eye-balls; he discovers his teeth, which are formed rather for destruction than chewing his food; he shews his tongue covered with points, and extends his claws, which appear almost as long as a man's fingers. Prepared in this manner for war, there are few animals that will venture to engage him; and even the boldest of the human kind are daunted at his approach. The elephant, the rhinoceros, the tiger, and the hippopotamos, are the only animals that are not afraid singly to make opposition.

"Nevertheless, neither the leopard nor the wild boar, if provoked, will shun the combat: they do not seek the lion to attack, but will not fly at his approach; they wait his onset, which he seldom makes unless compelled by hunger; they then exert all their strength, and are sometimes successful. We are told of the combat of a lion and a wild boar, in a meadow near Algiers, which continued for a long time with incredible obstinacy. At last, both were seen to fall by the wounds they had given each other; and the ground all about them was covered with their blood. These instances, however, are very rare, for the lion is in general the undisputed master of the forest. Man is the only creature that attacks him with almost certain success; with the assistance of dogs and horses, which are trained to the pursuit. These animals, that, in a state of nature, would have fled from the presence of the lion in an agony of consternation, when conscious of the assistance of man, become pursuers in their turn, and boldly hunt their natural tyrant. The dogs are always of the large breed; and the horses themselves, as Gessner assures us, must be of that sort called *charossi*, or lion-eyed, all others of this kind flying at the sight of the lion, and endeavouring to throw their riders. When the lion is roused, he recedes with a slow, proud motion; he never goes off directly forward, nor measures his paces equally, but takes an oblique course, going from one side to the other, and bounding rather than running. When the hunters approach him, they either shoot or throw their javelins; and in this manner disable him before he is attacked by the dogs, many of whom he would otherwise destroy. He is very vivacious, and is never killed at once, but continues to fight desperately even after he has received his mortal blow. He is also taken by pit-falls; the natives digging a deep hole in the ground, and covering it slightly over with sticks

and earth; which, however, give way beneath his weight, and he sinks to the bottom, from whence he has no means of escape. But the most usual manner of taking this animal is while a cub, and incapable of resistance. The place near the den of the lioness is generally well known by the greatness of her depredations on that occasion; the natives, therefore, watch the time of her absence, and, aided by a swift horse, carry off her cubs; which they sell to strangers, or to the great men of their country."

The lion, while young and active, lives by hunting in the forest at the greatest distance from any human habitation; and seldom quits this retreat while able to subsist by his natural industry; but when he becomes old, and unfit for the purposes of surprise, he boldly comes down into places more frequented, attacks the flocks and herds that take shelter near the habitation of the shepherd or the husbandman, and depends rather upon his courage than his address for support. It is remarkable, however, that when he makes one of these desperate sallies, if he finds men and quadrupeds in the same field, he only attacks the latter, and never meddles with men, unless they provoke him to engage. It is observed that he prefers the flesh of camels to any other food: he is likewise said to be fond of that of young elephants; these he often attacks before their trunk is yet grown; and, unless the old elephant comes to their assistance, he makes them an easy prey.

The lion is terrible upon all occasions, but particularly at those seasons when he is incited by desire, or when the female has brought forth. It is then that the lioness is seen followed by eight or ten males, who fight most bloody battles among each other, till one of them becomes victorious over all the rest. She is said to bring forth in spring, and to produce but once a year. "With respect to the time of gestation, naturalists have been divided, some asserting that the lioness went with young six months, and others but two. The time also of their growth and their age have hitherto been left in obscurity; some asserting that they acquired their full growth in three years, and others that they require a longer period to come to perfection; some saying (and among this number is Mr. Buffon) that they lived to but twenty, or twenty-two years at most; others making their lives even of shorter duration. All these doubts are now

reduced to certainty; for we have had several of these animals bred in the Tower; so that the manner of their copulation, the time of their gestation, the number they bring forth, and the time they take to come to perfection, are all pretty well known. Although the lion emits his urine backwards, yet he couples in the ordinary manner; and, as was said before, his internal structure, in almost every respect, resembles that of a cat. The lioness, however, is upon these occasions particularly fierce, and often wounds the lion in a terrible manner. She goes with young, as I am assured by her keeper, no more than five months; the young ones, which are never more than two in number when brought forth, are about the size of a large pug-dog, harmless, pretty, and playful; they continue the teat for twelve months, and the animal is more than five years in coming to perfection. As to its age, from its imprisoned state, we can have no certainty; since it is very probable that, being deprived of its natural climate, food, and exercise, its life must be very much abridged. However, naturalists have hitherto been greatly mistaken as to the length of its existence. The great he-lion, called *Pompey*, which died in the year 1760, was known to have been in the Tower for above seventy years; and one lately died there, which was brought from the river Gambia, that died above sixty-three. The lion, therefore, is a very long-lived animal; and very probably, in his native forests, his age exceeds even that of man himself."

In this animal, all the passions, even of the most gentle kind, are in excess, but particularly the attachment of the female to her young. The lioness, though naturally less strong, less courageous, and less mischievous, than the lion, becomes terrible when she has got young ones to provide for. She then makes her incursions with even more intrepidity than the lion himself; she throws herself indiscriminately among men and other animals; destroys without distinction; loads herself with the spoils, and brings it home reeking to her cubs, whom she accustoms betimes to cruelty and slaughter. She usually brings forth in the most retired and inaccessible places; and when she fears to have her retreat discovered, often hides her tracks, by running back her ground, or by brushing them out with her tail. She sometimes also, when her apprehensions are great, transports them

from one place to another; and if obstructed, defends them with determined courage, and fights to the last.

The lion is chiefly an inhabitant of the torrid zone; and, as was said, is always most formidable there; nevertheless, he can subsist in more temperate climates; and there was a time when even the southern parts of Europe were infested by him. At present, he is only found in Africa and the East Indies; in some of which countries he grows to an enormous height. The lion of Bildulgerid is said to be nearly five feet high, and between nine and ten feet from the tip of the nose to the insertion of the tail. We have in the Tower, at present, one of above four feet high, that was brought from Morocco, which is the largest that, for some time past, has been seen in Europe. The ordinary size is between three and four feet; the female being, in all her dimensions, about one-third less than the male. There are no lions in America; the Puma, which has received the name of the *American lion*, is, when compared, a very contemptible animal, having neither the shape, the size, nor the mane, of the lion; being known to be extremely cowardly, to climb trees for its prey, to subsist rather by its cunning than its courage, and to be inferior even to the animal that goes by the name of the *American tiger*. We ought not, therefore, to confound this little treacherous creature with the lion, which all the ancients have concurred in denominating the *king of beasts*, and which they have described as brave and merciful. "Indeed, the numerous accounts which they have given us of this animal's generosity and tenderness, shew that there must be some foundation for the general belief of its good qualities; for mankind seldom err when they are all found to unite in the same story. However, perhaps, the caution of Aristophanes, the comic poet, is better followed in practice, who advises us to have nothing to do with this creature, but to let the lioness suckle her own whelps."*

* Ου χρη λεοντος σκυμνον εν πολει τρεφειν.

THE TIGER.

"THE ancients had a saying, *That as the peacock is the most beautiful among birds, so is the tiger among quadrupeds.** In fact, no quadruped can be more beautiful than this animal: the glossy smoothness of his hair, which lies much smoother, and shines with greater brightness than even that of the leopard, the extreme blackness of the streaks with which he is marked, and the bright yellow colour of the ground which they diversify, at once strike the beholder. To this beauty of colouring is added an extremely elegant form, much larger indeed than that of the leopard, but more slender, more delicate, and bespeaking the most extreme swiftness and agility. Unhappily, however, this animal's disposition is as mischievous as its form is admirable; as if Providence was willing to shew the small value of beauty, by bestowing it on the most noxious of quadrupeds. We have at present one of these animals in the Tower, which, to the view, appears the most good-natured and harmless creature in the world; its physiognomy is far from fierce or angry; it has not the commanding stern countenance of the lion, but a gentle placid air; yet, for all this, it is fierce and savage beyond measure; neither correction can terrify, nor indulgence can tame it."

The chief and most observable distinction in the tiger, and in which it differs from all others of the mottled kind, is in the shape of its colours, which run in streaks or bands in the same direction as his ribs, from the back down to the belly. The leopard, the panther, and the ounce, are all partly covered like this animal, but with this difference, that their colours are broken in spots all over the body; whereas, in the tiger they stretch lengthwise, and there is scarce a round spot to be found on his skin. Besides this, there are other observable distinctions: the tiger is much larger, and often found bigger even than the lion himself; it is much slenderer also in proportion to its size, its legs shorter, and its neck and body longer. In short, of all other animals, it most resembles the cat in shape; and if

* Tantem autem præstat pulchritudine tigris inter alias feras quantum inter volucres pavo.

we conceive the latter magnified to a very great degree, we shall have a tolerable idea of the former.

In classing carnivorous animals, we may place the lion foremost;* and immediately after him follows the tiger, which seems to partake of all the noxious qualities of the lion, without sharing any of his good ones. To pride, courage, and strength, the lion joins greatness, clemency, and generosity; but the tiger is fierce without provocation, and cruel without necessity. The lion seldom ravages except when excited by hunger; the tiger, on the contrary, though glutted with slaughter, is not satisfied, still continues the carnage, and seems to have its courage only inflamed by not finding resistance. In falling in among a flock or herd, it gives no quarter, but levels all with indiscriminate cruelty, and scarcely finds time to appease its appetite, while intent upon satisfying the malignity of its nature. It thus becomes the scourge of the country where it is found; it fears neither the threats nor the opposition of mankind; the beasts, both wild and tame, fall equally a sacrifice to its insatiable fury; the young elephant and the rhinoceros become equally its prey, and it not unfrequently ventures to attack even the lion himself.

Happily for the rest of nature, that this animal is not common, and that the species is chiefly confined to the warmest provinces of the East. The tiger is found in Malabar, in Siam, in Bengal, and in all the countries which are inhabited by the elephant or the rhinoceros. Some even pretend that it has a friendship for, and often accompanies the latter, in order to devour its excrements, which serve it as a purge. Be this as it will, there is no doubt but that they are often seen together at the sides of lakes and rivers; where they are probably both compelled to go by the thirst which, in that torrid climate, they must very often endure. It is likely enough also that they seldom make war upon each other, the rhinoceros being a peaceable animal, and the tiger knowing its strength too well to venture the engagement. It is still more likely that the tiger finds this a very convenient situation, since it can there surprise a greater number of animals, which

* The remainder of this description is taken from Mr. Buffon, except where marked with commas.

are compelled thither from the same motives. In fact, it is generally known to lurk near such places where it has an opportunity of choosing its prey, or rather of multiplying its massacres. When it has killed one, it often goes to destroy others, swallowing their blood down at large draughts, and seeming rather glutted than satiated with its abundance.

However, when it has killed a large animal, such as a horse or a buffalo, it immediately begins to devour it on the spot, fearing to be disturbed. In order to feast at its ease, it carries off its prey to the forest, dragging it along with such ease, that the swiftness of its motion seems scarcely retarded by the enormous load it sustains. From this alone we may judge of its strength; but to have a more just idea of this particular, let us stop a moment to consider the dimensions of this most formidable creature. Some travellers have compared it for size to a horse, and others to a buffalo, while others have contented themselves with saying, that it is much larger than a lion. We have recent accounts of this animal's magnitude, that deserve the utmost confidence. Mr. Buffon has been assured by one of his friends, that he saw a tiger in the East Indies fifteen feet long. "Supposing that he means including the tail, this animal, allowing four feet for that, must have been eleven feet from the tip of the nose to the insertion of the tail. Indeed, that which is now in the Tower is not so large, being, as well as I could measure, six feet from the tip to the insertion, and the tail was three feet more. Like all the rest of its kind, its motions are irregular and desultory; it bounds rather than runs; and, like them, rather chooses to take its prey by surprise, than to be at the trouble of hunting it down." How large a leap it can take at once we may easily judge, by comparing what it might do, to what we see so small an animal as the cat actually perform. The cat can leap several feet at a bound; and the tiger, who is ten times as long, can, no doubt, spring proportionably.

"The tiger is the only animal whose spirit seems untameable. Neither force nor constraint, neither violence nor flattery, can prevail in the least on its stubborn nature. The caresses of the keeper have no influence on their heart of iron: and time, instead of mollifying its disposition, only

serves to increase its fierceness and malignity. The tiger snaps at the hand that feeds it, as well as that by which it is chastised; every object seems considered only as its proper prey, which it devours with a look; and, although confined by bars and chains, still makes fruitless efforts, as if to shew its malignity when incapable of exerting its force."

To give a still more complete idea of the strength of this terrible creature, we shall quote a passage from Father Tachard, who was an eye-witness of a combat between a tiger and three elephants at Siam. For this purpose, the king ordered a lofty pallisade to be built of bamboo cane, about a hundred feet square; and in the midst of this were three elephants appointed for combating the tiger. Their heads, and a part of their trunk, were covered with a kind of armour, like a mask, which defended that part from the assaults of the fierce animal with which they were to engage. As soon, says this author, as we were arrived at the place, a tiger was brought forth from its den, of a size much larger than we had ever seen before. It was not at first let loose, but held with cords, so that one of the elephants approaching, gave it three or four terrible blows with its trunk on the back, with such force, that the tiger was for some time stunned, and lay without motion, as if it had been dead. However, as soon as it was let loose, and at full liberty, although the first blows had greatly abated its fury, it made at the elephant with a loud shriek, and aimed at seizing his trunk. But the elephant, wrinkling it up with great dexterity, received the tiger on his great teeth, and tossed it up into the air. This so discouraged the furious animal, that it no more ventured to approach the elephant, but made several circuits round the pallisade, often attempting to fly at the spectators. Shortly after, three elephants were sent against it, and they continued to strike it so terribly with their trunks, that it once more lay for dead; and they would certainly have killed it, had not there been a stop put to the combat.

From this account, we may readily judge of the strength of this animal, which, although reduced to captivity, and held by cords; though first disabled, and set alone against three; yet ventured to continue the engagement, and even that against animals covered and protected from its fury.

"Captain Hamilton informs us, that in the Sundah Rajah's dominions there are three sorts of tigers in the woods, and that the smallest are the fiercest. This is not above two feet high, appears to be extremely cunning, and delights in human flesh. The second kind is about three feet high, and hunts deer and wild hogs, besides the little animal which has been already described under the name of the *chevrotain*, or *Guinea deer*. The tiger of the largest sort is above three feet and a half high; but, although endowed with greater powers, is by no means so rapacious as either of the former. This formidable animal, which is called the *royal tiger*, (one of which we have at present in the Tower,) does not seem so ravenous nor so dangerous, and is even more cowardly. A peasant in that country, as this traveller informs us, had a buffalo fallen into a quagmire, and while he went for assistance, there came a large tiger, that with its single strength drew forth the animal, which the united force of many men could not effect. When the people returned to the place, the first object they beheld was the tiger, who had thrown the buffalo over its shoulder, as a fox does a goose, and was carrying it away, with the feet upward, towards its den; however, as soon as it saw the men, it let fall its prey, and instantly fled to the woods: but it had previously killed the buffalo, and sucked its blood; and, no doubt, the people were very well satisfied with its retreat. It may be observed, that some East Indian buffaloes weigh above a thousand pounds, which is twice as heavy as the ordinary run of our black cattle, so that from hence we may form a conception of the enormous strength of this rapacious animal, that could thus run off with a weight at least twice as great as that of itself.

"Were this animal as common as the panther, or even as the lion himself, thus furnished as it is with the power to destroy, and the appetite for slaughter, the country would be uninhabitable where it resides. But luckily the species is extremely scarce; and has been so since the earliest accounts we have had of the tiger. About the times of Augustus, we are assured by Pliny,* that when panthers were brought to Rome by hundreds, a single tiger was considered as an extraordinary sight; and he tells us,

* Plin. Hist. Nat. lib. viii. c. 17.

that the emperor Claudius was able to procure four only; which shews how difficultly they were procured. The incredible fierceness of this animal may be, in some measure, the cause of the scarcity which was then at Rome, since it was the opinion of Varro, that the tiger was never taken alive:* but its being a native only of the East Indies, and that particularly of the warmer regions, it is not to be wondered that the species should be so few."

We may, therefore, consider the species of the true streaked tiger, as one of the scarcest of animals, and much less diffused than that of the lion. As to the number of its young, we have no certain accounts; however, it is said, that it brings forth four or five at a time. Although furious at all times, the female, upon this occasion, exceeds her usual rapacity; and, if her young are taken from her, she pursues the spoiler with incredible rage; he, to save a part, is contented to lose a part, and drops one of her cubs, with which she immediately returns to her den, and again pursues him; he then drops another, and by the time she has returned with that, he generally escapes with the remainder. If she loses her young entirely, she then becomes desperate, boldly approaches even the towns themselves, and commits incredible slaughter. The tiger expresses its resentment in the same manner as the lion; it moves the muscles and skin of its face, shews its teeth, and shrieks in the most frightful manner. Its note is very different from that of the lion; being rather a scream than a roar: and the ancients expressed it very well, when they said, that *tigrides indomitæ rancant rugiuntque leones*.

The skin of these animals is much esteemed all over the East, particularly in China; the mandarins cover their seats of justice in the public places with it, and convert it into coverings for cushions in winter. In Europe, these skins, though but seldom to be met with, are of no great value, those of the panther and the leopard being held in much greater estimation. This is all the little benefit we derive from this dreadful animal, of which so many falsehoods have been reported; as, that its sweat was poisonous, and the hair of its whiskers more dangerous than an envenomed arrow. But the real mischiefs which the tiger occasions while living are sufficient, without giving imaginary ones to

* Tigris vivus capi adhuc non potuit. Var. de Ling. Lat.

the parts of its body when dead. In fact, the Indians sometimes eat its flesh, and find it neither disagreeable nor unwholesome.

There is an animal of America, which is usually called the *red tiger*, but Mr. Buffon calls it the *cougar*, which, no doubt, is very different from the tiger of the East. Some, however, have thought proper to rank both together, and I will take leave to follow their example, merely because the cougar is more like a tiger in every thing, except the colour, than any other animal I know, having the head, the body, and the neck, shaped very much in the same manner. Of these slight differences, words would give but a very faint idea; it will be, therefore, sufficient to observe, that they are both equally slender, and are smaller where the neck joins the head, than others of the panther kind. There is one at present in the Tower; and it seemed to me, as well as I could see it through the bars, that were it properly streaked and coloured, it would in all things resemble a small tiger. It is, however, of a very different colour, being of a deep brown, and the tail very long and pointed. It is rather darker on the back; under the chin it is a little whitish, as also on the lower part of the belly.

Of all the American animals, this is the most formidable and mischievous; even their pretended lion not excepted; it is said, there are several sorts of them; and, as well as I can remember, I have seen one or two here in England, both differing from the present, in size and conformation. It is, indeed, a vain endeavour to attempt to describe all the less obvious varieties in the cat kind. If we examine them minutely, we shall find the differences multiply upon us so much, that, instead of a history, we shall only be paid with a catalogue of distinctions. From such of them as I have seen, within these last six years, I think I could add two animals of this species, that have not been hitherto described, and with the names of which he that shewed them was utterly unacquainted. But it is a poor ambition, that of being eager to find out new distinctions, or adding one noxious animal more, to a list that is already sufficiently numerous. Were the knowing a new variety to open an unknown history, or in the least to extend our knowledge, the inquiry would be then worth pursuing;

but what signifies mentioning some trifling difference, and from thence becoming authors of a new name, when the difference might have originally proceeded either from climate, soil, or indiscriminate copulation?

The cougars are extremely common in South America; and, where the towns border upon the forest, these make frequent incursions by night into the midst of the streets, carrying off fowls, dogs, and other domestic creatures. They are, however, but weak and contemptible, compared to the great tiger, being found unable to cope with a single man. The Negroes and Indians are very dexterous in encountering them; and some, even for the sake of their skins, seek them in their retreats. The arms in this combat, seemingly so dangerous, are only a lance of two or three yards long, made of heavy wood, with the point hardened in the fire; and a kind of scymetar, of about three quarters of a yard in length. Thus armed, they wait till the tiger makes an assault against the left hand, which holds the lance, and is wrapped up in a short cloak of baize. Sometimes the animal, aware of the danger, seems to decline the combat; but then its antagonist provokes it with a slight touch of the lance, in order, while he is defending himself, to strike a sure blow. As soon, therefore, as the creature feels the lance, it grasps it with one of its paws, and with the other strikes at the arm which holds it. Then it is that the person nimbly aims a blow with his scymetar, which he kept concealed, with the other hand, and hamstrings the creature, which immediately draws back enraged, but instantly returns to the charge. But then receiving another stroke, it is totally deprived of the power of motion; and the combatant, killing it at his leisure, strips the skin, cuts off the head, and returns to his companions, displaying these as the trophies of his victory.

This animal, as we are assured, is often more successful against the crocodile; and it is the only quadruped in that part of the world that is not afraid of the engagement. It must be no unpleasant sight to observe, from a place of safety, this extraordinary combat, between animals so terrible and obnoxious to man. Such as have seen it, describe it in the following manner. When the tiger, impelled by thirst, that seems continually to consume it, comes down

to the river side to drink, the crocodile, which makes no distinction in its prey, lifts its head above water to seize it; the tiger, not less rapacious than the other, and unacquainted with the force of the enemy, boldly ventures to seize it, and plunges its claws into the eyes of the crocodile, which is the only vulnerable part of its body: upon this the crocodile instantly dives under water, and the tiger goes down with him, for it will sooner die than let go its hold. In this manner the combat continues for some time, until the tiger is drowned, or escapes, as is sometimes the case, from its disabled enemy.

These animals are common in Guiana.* They were formerly seen swimming over, in great numbers, into the island of Cayenne, to attack and ravage the flocks and herds of the inhabitants. In the beginning, they were a terrible scourge to the infant colony; but, by degrees, they were repulsed and destroyed, and are now seen no longer at that place. They are found in Brazil, in Paraguay, in the country of the Amazons, and in several other parts of South America. They often climb trees in quest of prey, or to avoid their pursuers. They are deterred by fire, like all other animals of the cat kind; or, more properly speaking, they seldom venture near those places where they see it kindled, as they are always sure of their enemies being near, and their nocturnal eyes are dazzled by the brightness of the blaze. From the description of this animal, one would be hardly led to suppose that its flesh was good for food; and yet we have several accounts which allege the fact, some asserting it to be superior even to mutton: however, what Monsieur Des Marchais observes, is most likely to be true; namely, that the most valuable part of this animal is its skin, and that its flesh is but indifferent eating, being generally lean, and usually having a strong fumet.

THE PANTHER, AND THE LEOPARD.

We have hitherto found no great difficulty in distinguishing one animal from another, each carrying its own peculiar marks, which, in some measure, serve to separate it from all the rest. But it is otherwise, when we come to

* Buffon, vol. xix. p. 22.

these of the cat kind, that fill up the chasm between the tiger and the cat. The spots with which their skins are diversified, are so various, and their size so equivocal, that it is no easy matter to distinguish the species, particularly as we have little else but the spots and the size to guide us in making the distinction. If we regard the figure and diversity of the spots, we shall find many varieties not taken notice of by any naturalist; if we are led by the size, we shall find an imperceptible gradation from the cat to the tiger. It would be vain, therefore, to make as many varieties in these animals as we see differences in spots or nature; it will be sufficient to seize the most general distinctions, and leave the rest to such as are fond of more minute disquisitions.

Of all this tribe, whose skins are so beautifully spotted, and whose natures are so mischievous, the panther may be considered as the foremost. This animal has been by many naturalists mistaken for the tiger; and in fact, it approaches next to it in size, fierceness, and beauty. It is distinguished, however, by one obvious and leading character; that of being spotted, not streaked; for, in this particular, the tiger differs from the panther, the leopard, and almost all the inferior ranks of this mischievous family.

This animal, which Mr. Buffon calls simply the *panther;* Linnæus, the *pard;* Gessner, the *pardalis;* and the modern Latins, the *leopardus:* this animal, I say, which goes by too many names, and which the English have indiscriminately called by the name of the PANTHER or the LEOPARD, may be considered as the largest of the kind, and is spotted in a manner somewhat different from those that are smaller. As those spots, however, make the principal difference between it and the lesser animals, which it otherwise resembles in shape, size, disposition, and beauty, I will first shew these slight distinctions, and mention the names each animal has received in consequence thereof; and then proceed to give their history together, still marking any peculiarity observable in one of the species which is not found in the rest.

Next to the great panther, already mentioned, is the animal which Mr. Buffon calls the LEOPARD, a name which he acknowledges to be given arbitrarily, for the sake of distinction. Other naturalists have not much attended

to the slight differences between this and the great panther, nor have they considered its discriminations as sufficient to entitle it to another name. It has hitherto, therefore, gone under the name of the LEOPARD, or PANTHER of Senegal, where it is chiefly found. The differences between this animal and the former are these: the large panther is often found to be six feet long, from the tip of the nose to the insertion of the tail; the panther of Senegal is not above four. The large panther is marked with spots in the manner of a rose, that is, five or six make a kind of circle, and there is generally a large one in the middle. The leopard of Senegal has a much more beautiful coat, the yellow is more brilliant, and the spots are smaller, and not disposed in rings but in clusters. As to the rest, they are both whitish under the belly; the tail in both is pretty long, but rather longer in proportion in the latter than in the former. To these two animals, whose differences seem to be so very minute, we may add a third; namely, the JAGUAR, or PANTHER of America. This, in every respect, resembles the two former, except in the disposition of its spots, and that its neck and head are rather streaked than spotted. The jaguar is also said to be lower upon its legs, and less than the leopard of Senegal. These three quadrupeds, as we see, have but very slight differences, and the principal distinction used by Mr. Buffon, is taken from the size: the first, as he says, is usually six feet long; the second, four feet; and the last about three: however, it appears from the particular subjects of his description, that the panther in his possession was not above three feet seven inches long; that the leopard's skin which he describes was about four; and that the jaguar, at two years old, was between two and three feet long, which, when come to its full growth, would, no doubt, be four feet long, as well as the two former. From hence, therefore, we may conclude, that the size in these animals is not sufficient to make a distinction among them; and that those who called them all three by the indiscriminate names of the leopard and the panther, if not right, were at least excusable. Of those which are now to be seen in the Tower, the jaguar, or the American panther, is rather the largest of the three; and is by no means the contemptible animal which Mr. Buffon describes

it to be: the leopard is the least of them, and has, by some travellers, been supposed to be an animal produced between the panther and the ounce, an animal which it resembles, but is less than any of the former. These three animals we may, therefore, rank together, as they agree pretty nearly in their robe, their size, their dispositions, and their ferocity.

We come next to an animal confessedly different from any of the former, being much smaller, and its colour more inclining to white. Its name, however, in our language, has caused no small confusion. It has been generally called by foreigners the ONZA, or the OUNCE, and this name some of our own writers have thought proper to give it; but others of them, and these the most celebrated, such as Willoughby, have given this name to a different animal, with a short tail, and known to the ancients and moderns by the name of the *lynx*. I confess myself at a loss, in this case, whom to follow; the alteration of names should be always made with great caution, and never but in cases of necessity. If we follow Willoughby, there will be an animal of the panther kind, very distinguishable from all the rest, left without a name; and if we recede from him, it will serve to produce some confusion among all the numerous class of readers and writers who have taken him for their guide; however, as he seems himself to have been an innovator, the name of the lynx having been long adopted into our language before, it was unnecessary to give the animal that bore it another name, and to call that creature an ounce, which our old writers had been accustomed to know by the Latin appellation; for this reason, therefore, we may safely venture to take a name that has been long misapplied, from the lynx, and restore it to the animal in question. We will, therefore, call that animal of the panther kind, which is less than the panther, and with a longer tail, the *ounce;* and the lynx may remain in possession of that name by which it was known among all our old English writers, as well as by all antiquity.

The OUNCE, or the ONZA of Linnæus, is much less than the panther, being not, at most, above three feet and a half long: however, its hair is much longer than that of the panther, and its tail still more so. The panther of

four or five feet long, has a tail of but two feet, or two feet and a half. The ounce, which is but about three feet, has a tail often longer than the rest of its body. The colour of the ounce is also apparently different, being rather more inclining to a cream-colour, which is deeper on the back, and whiter towards the belly. The hair on the back is an inch and a half long; and that on the belly two inches and a half, which is much longer than that of the panther. Its spots are disposed pretty much in the same manner as the large panther, except that on the haunches it is rather marked with stripes than with spots.

Descending to animals of this kind that are still smaller, we find the CATAMOUNTAIN, which is the ocelot of Mr. Buffon, or the tiger-cat of most of those who exhibit it as a show. It is less than the ounce, but its robe more beautifully variegated. It is an American animal, and is about two feet and a half in length, from the nose to the insertion of the tail. It is extremely like a cat, except that it is larger and slenderer, that its colours are more beautiful, and its tail rather shorter. The fur is of a reddish colour, the whole beautified with black spots, and streaks of different figures. They are long on the back, and round on the belly and paws. On the ears are black stripes, which run across; but, in other respects, they entirely resemble those of a cat. These colours, however, which naturalists have taken great pains minutely to describe, are by no means permanent, being differently disposed in different animals of the same species. I remember to have seen an animal of this size, but whether of this species I will not pretend to say, some years ago, that was entirely brown, and was said also to have come from America.

From this tribe of the cat kind, with spotted skins and a long tail, we come to another, with skins diversified in like manner, but with a shorter tail. The principal of these is the LYNX, the name by which the animal was known to Ælian, among the ancients; and to all our old English writers among those of a more modern date. This name has been corrupted by the Portuguese into the word *ouze;* and this corruption has been adopted by Ray, who has improperly called this animal the *ounce*, after some of the foreign travellers. The first striking distinction between

the lynx, and all those of the panther kind, is in its tail, which is at least half as short in proportion, and black at the extremity. Its fur is much longer, the spots on the skin less vivid, and but confusedly mingled with the rest. Its ears are much longer, and tipped at the points with a black tuft of hair. The colour round the eyes is white, and the physiognomy more placed and gentle. Each hair of this animal is of three different colours: the root is of a grayish brown; the middle red, or of an ash colour; and the ends white. This whiteness at the ends takes up so small a part of the particular hair, that it does not prevent us from seeing the principal colour, which is that of the middle part; so that it only makes the surface of the body appear as if it were silvered over; however, the hair of which the spots consist has no white at the ends, and at the roots it is not quite so black as the other part. This animal is not above the size of the ounce, but is rather stronger built, and it has but twenty-eight teeth; whereas all the rest of the cat kind already mentioned have thirty.

Another animal of this kind is called the SIAGUSH, or, as Mr. Buffon names it, the CARACAL. It is a native of the East Indies, and resembles the lynx in size, in form, and even in the singularity of being tufted at the tips of the ears. However, the siagush differs in not being mottled as the lynx is; its fur, or rather hair, is rougher and shorter; its tail is rather longer; its muzzle more lengthened; its physiognomy more fierce, and its nature more savage.

The third and last animal that need to be mentioned of this kind, is that which Mr. Buffon calls the SERVAL, and which he has first described. It is a native of Malabar, resembling the panther in its spots, but the lynx in the shortness of its tail, in its size, and in its strong-built form.

These seem to be all the principal distinctions among animals of the panther kind, from the largest of this tribe down to the domestic cat, which is the smallest of all these fierce and mischievous varieties. In all, their nature seems pretty much the same; being equally fierce, subtle, cruel, and cowardly. The panther, including the leopard and the jaguar, or American panther, as they are the largest, so also

are they the most dangerous of this kind; for the whole race of cats are noxious in proportion to their power to do mischief. They inhabit the most torrid latitudes of India, Africa, and America, and have never been able to multiply beyond the torrid zone. They are generally found in the thickest and the most entangled forests, and often near remote habitations, where they watch to surprise all kinds of domestic animals. They very seldom attack man, even though provoked by him; they seem rather desirous of finding safety by flight, or by climbing trees, at which they are very expert. In this manner also they often pursue their prey, and, being expert at seizing it, as well above as below, they cause a vast destruction. Of all other animals, these are the most sullen, and, even to a proverb, untameable. They still preserve their fierce and treacherous spirit; and at those places where they are exposed to be seen among others, we often observe, that while their keeper is familiar with the lion or the bear, yet he is apprehensive of the large panther, and keeps it bound with the shortest chain.

As the ounce differs from these in figure and size, so also it seems to differ in disposition, being more mild, tractable, and tame. These we often see as harmless and innocent as cats; and there is one at present in the Tower with which the keeper plays without the smallest apprehension. I own I was not a little uneasy at first for the man, when he put his hand through the bars, and called the animal by its name; but was a good deal surprised to see the creature, which one might suppose irritated by long confinement, come gently up to him, stroke his hand with its face, in the manner of a cat, and testify the utmost gentleness of disposition. The ounce, therefore, is remarkable for being easily tamed; and, in fact, it is employed all over the East for the purposes of hunting. Not, indeed, but that panthers themselves are sometimes used for this purpose, but they are never thoroughly subdued like the former, being usually brought to the field in a carriage, and kept chained and caged until they are shewn the gazelle, or the leveret, which is their prey. This they pursue rather by three or four great springs than by running. If they seize it by this sudden effort, it finds no mercy; but if it escapes from their first effort, they never attempt to pursue, and

appear quite disappointed and confounded at their mischance. It sometimes happens that they are so much enraged at it, that they attack even their employer, and his only resource to avoid their fury is to throw them some small pieces of meat, which he has brought with him for that purpose.

The ounce, however, is not so dangerous; and is treated with more confidence and familiarity. It is usually brought to the field hood-winked behind one of the horsemen. When the game appears, the ounce is instantly uncovered, and shewn where it lies: upon which the fierce creature darts like an arrow to the place, and seizes it at once, or, missing it, remains motionless on the place. It would be vain to attempt retrieving its disgrace, by continuing the pursuit; for, although it bounds with greater agility than most other animals, yet it is slow and awkward in running, and has no means of finding the animal it pursues by the smell, as is common among those of the dog kind. From hence, therefore, it appears, how much superior the European method of hunting is to that of the Asiatic: since whatever amusement this exercise affords must arise from the continuance of the chase, and from the fluctuation of doubt and expectation, which raise and depress the pursuers by turns. All this an Asiatic hunter is deprived of; and his greatest pleasure can scarcely be more than what among us is called *coursing*, in which the dog pursues the animal, and keeps it constantly in view.

But it must not be supposed that it is from choice the Asiatics use this method of chase; for, no doubt, were dogs serviceable among them as they are in Europe, they would be employed for the same purposes. But the fact is, that the extreme heat of the tropical climates produces such universal putrefaction, and sends up such various and powerful scents, that dogs are at first bewildered in the chase, and, at last, come to lose the delicacy of their scent entirely. They are, therefore, but little used in those warm countries; and what could they avail in places where almost every other animal of the forest is stronger and more rapacious? The lion, the tiger, the panther, and the ounce, are all natural enemies to the dog, and attack him wherever he appears with ungovernable fury. The breed, therefore, in those places would quickly be destroyed; so

that they are obliged to have recourse to those animals which are more fitted to serve them; and thus convert the ounce to those purposes for which dogs are employed in Europe.

The CATAMOUNTAIN, or OCELOT, is one of the fiercest, and, for its size, one of the most destructive animals in the world. It is, as was before observed, a native of South America, and by no means capable of the same education as the ounce, which it more approaches in size than in disposition. Two of these, from whom Mr. Buffon has taken his description, were brought over from Carthagena, and having been taken from the dam when very young, were afterwards suckled by a bitch. But, before they were three months old, they had strength and ingratitude enough to kill and devour their nurse. Their succeeding fierceness and malignity seemed to correspond with their first efforts; for no other arts could tame or soften their natures; and while they continued in their cages, they still testified an unceasing disposition for slaughter. When their food was given them, the male always served himself before the female ventured to touch a bit; and it was not till he was satisfied that the other began. In their savage state, these animals are still more destructive; having great strength and agility, they very easily find and overtake their prey, which they pursue among the tops of the trees as well as on the ground; but what renders them still more mischievous is, their unceasing appetite rather for the blood than the flesh of their prey. They suck this with the greatest avidity, but frequently leave the carcase otherwise untouched, in order to pursue other animals for the blood in like manner. They generally continue on the tops of trees, like our wild cats, where they make their nest, and often bring forth their young. When they spy any animal they can master, and there are but few in the forest but what are inferior, they dart down upon it with inevitable exactness.

The whole tribe of animals of the panther kind, with long tails, are chiefly inhabitants, as was said, of the torrid zone; but those of the short-tailed kind, and particularly the lynx, is principally found in the cold countries that are bordering on the pole. The lynx is chiefly to be met with in the north of Germany, Lithuania, Muscovy, Siberia,

and North America. Those of the new continent, however, are rather smaller than in Europe, as is the case with almost all their quadrupeds; they are somewhat whiter also, but in other respects there is scarcely any difference to be found among them.* This animal has been called by some *lupus cervarius*, or a creature compounded between a wolf and a stag; but for what reason, is hard to guess; it no way resembles either, in shape or in disposition. In its nature, it exactly resembles the cat, except that being bigger, and nearly two feet long, it is bolder and fiercer. Like the cat, it climbs trees, and seeks its prey by surprise; like the cat, it is delicate and cleanly, covering its urine with its paws; and it resembles the wolf in nothing except its cry, which often deceives the hunters, and induces them to think they hear a wolf and not a lynx. This animal also is rather more delicate than the cat; and after having once feasted upon its prey, will never return to it again, but hunts the woods for another. From hence may have arisen the common report of the lynx having, of all other quadrupeds, the shortest memory. This, however, is not the only idle story that has been propagated of it; as of its seeing with such perspicuity, as to perceive objects through walls and mountains; as of having its urine of such a quality, as to harden and become a precious stone; with several others, propagated by ignorance or imposture.

The SYAGUSH and the SERVAL are both so like all the rest of the cat kind in disposition, that it is but repeating the same account once more to give their distinct history. As the lynx is found only in cold countries, so the syagush is to be met with only in the warm tropical climates. It is used, in the same manner as the ounce, for hunting; but it seems to have a property which the other has not; namely, that of being able to overtake its prey by pursuing it. Whether this is performed by having a finer scent than the former, or greater swiftness, we are not informed; being only told that when it overtakes either the gazelle or the antelope, it leaps upon their backs, and, getting forward to their shoulders, scratches their eyes out, by which means they become an easy prey to the hunters. Some have called this animal the *lion's provider;* and it is said, that when it calls him to pursue his prey, its voice very

* Buffon.

much resembles that of one man calling another.* From hence we may conjecture that this animal pursues its prey in full cry, and that the lion only follows to partake or seize the spoil. The same account is given also of the jackal; and very probably it may be true, not only of these animals, but of some others, since it is natural enough to suppose that the lion will pursue whenever he is taught to discover his prey.

We had one of these animals a few years ago sent over from the East Indies, but it was not able to endure the change of climate, and it died in a very short time after it was brought to the Tower. Whether consumed by disease or not I cannot tell, but it seemed to me much slenderer than the cat or the lynx, and its ears were much longer; however, it is a very strong creature for its size, and has been known to kill a large dog in single combat:† nevertheless, it is, like all of the cat kind, except the lion, remarkable for its cowardice, and will never, except in cases of necessity, attack an animal that is its equal in strength or activity. For this reason, when brought into the field, and put upon a service of danger, it obstinately refuses, and is alert only in the pursuit of animals that are too feeble for resistance, or too timid to exert their strength.

From what has been said of this rapacious tribe, we perceive a similitude in the manners and dispositions of them all, from the lion to the cat. The similitude of their internal conformation is still more exact; the shortness of their intestines, the number of their teeth, and the structure of their paws. The first of this class is the lion, distinguishable from all the rest by his strength, his magnitude, and his mane. The second is the tiger, rather longer than the lion, but not so tall, and known by the streaks and the vivid beauty of its robe; including also the American tiger or cougar; distinguishable by its size, next to that of the tiger, its tawny colour, and its spots. The third is the panther and the leopard. The fourth is the ounce, not so large as any of the former, spotted like them, but distinguishable by the cream-coloured ground of its hair, and the great length of its tail, being above the length of its body. The fifth is the catamountain or tiger cat, less than the ounce, but differing particularly in having a shorter tail, and being streaked down the back like a tiger. The sixth is the short-tailed kind;

* Thevenot, vol. ii. p. 114. † Buffon.



T. Dixon sc.

1. SHEPHERD'S DOG. 2. BULL DOG. 3. WOLF. 4. FOX.

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namely, the lynx, of the size of the former, but with a short tail, streaked, and the tips of its ears tufted with black. The seventh is the syagush, differing from the lynx in not being mottled like it, in not being so large, and in having the ears longer, though tipped with black, as before. The eighth is the serval, resembling the lynx in its form, and the shortness of its tail; streaked also like it, but not having the tips of its ears tufted. Lastly, the cat, wild and tame, with all its varieties; all less than any of the former, but, like them, equally insidious, rapacious, and cruel.

This whole race may be considered as the most formidable enemy of mankind: there are others indeed stronger, but they are gentle, and never offer injury till injured; there are others more numerous, but they are more feeble, and rather look for safety by hiding from man, than opposing him. These are the only quadrupeds that make good their ground against him; and which may be said to keep some kingdoms of the earth in their own possession. How many extensive countries are there in Africa, where the wild beasts are so numerous, that man is deterred from living amongst them; reluctantly giving up to the lion and the leopard, extensive tracts, that seem formed only for his delight and convenience!

CHAP. II.

ANIMALS OF THE DOG KIND.

The second class of carnivorous quadrupeds may be denominated those of the *dog kind*. This class is neither so numerous nor so powerful as the former, and yet neither so treacherous, rapacious, or cowardly. This class may be principally distinguished by their claws, which have no sheath, like those of the cat kind, but still continue at the point of each toe, without a capability of being stretched forward, or drawn back. The nose also, as well as the jaw, of all the dog kind, is longer than in the cat; the body is, in proportion, more strongly made, and covered with hair instead of fur. There are many internal distinctions also; as in the intestines, which are much longer in the dog kind, than in those of the cat; the eye is not formed for night vision; and the olfactory nerves are dif-

fused, in the dog kinds, upon a very extensive membrane within the skull.

If we compare the natural habitudes of this class with the former, we shall find that the dog kinds are not so solitary as those of the cat, but love to hunt in company, and encourage each other with their mutual cries. In this manner the dog and the jackal pursue their prey; and the wolf and fox, which are of this kind, though more solitary and silent among us, yet, in countries where less persecuted, and where they can more fearlessly display their natural inclinations, they are found to keep together in packs, and pursue their game with alternate howlings.

Animals of the dog kind want some of the advantages of the cat kind, and yet are possessed of others in which the latter are deficient. Upon observing their claws, it will easily be perceived that they cannot, like cats, pursue their prey up the sides of a tree, and continue the chase among the branches; their unmanageable claws cannot stick in the bark, and thus support the body up along the trunk, as we see the cat very easily perform: whenever, therefore, their prey flies up a tree from them, they can only follow it with their eyes, or watch its motions till hunger again brings it to the ground. For this reason, the proper prey of the dog kind, are only those animals, that, like themselves, are unfitted for climbing; the hare, the rabbit, the gazelle, or the roebuck.

As they are, in this respect, inferior to the cat, so they exceed it in the sense of smelling; by which alone they pursue their prey with certainty of success, wind it through all its mazes, and tire it down by perseverance. It often happens, however, in the savage state, that their prey is either too much diminished, or too wary to serve for a sufficient supply. In this case, when driven to an extremity, all the dog kinds can live for some time upon fruits and vegetables, which, if they do not please the appetite, at least serve to appease their hunger.

Of all this tribe, the dog has every reason to claim the preference, being the most intelligent of all known quadrupeds, and the acknowledged friend of mankind. The dog,* independent of the beauty of his form, his vivacity, force, and swiftness, is possessed of all those internal quali-

* The rest of this description of the dog is taken from Mr. Buffon: what I have added, is marked as before.

fications that can conciliate the affections of man, and make the tyrant a protector. A natural share of courage, an angry and ferocious disposition, renders the dog, in its savage state, a formidable enemy to all other animals: but these readily give way to very different qualities in the domestic dog, whose only ambition seems the desire to please: he is seen to come crouching along, to lay his force, his courage, and all his useful talents, at the feet of his master; he waits his orders, to which he pays implicit obedience; he consults his looks, and a single glance is sufficient to put him in motion; he is more faithful even than the most boasted among men; he is constant in his affections, friendly without interest, and grateful for the slightest favours; much more mindful of benefits received, than injuries offered, he is not driven off by unkindness; he still continues humble, submissive, and imploring; his only hope to be serviceable, his only terror to displease; he licks the hand that has been just lifted to strike him, and at last disarms resentment, by submissive perseverance.

More docile than man, more obedient than any other animal, he is not only instructed in a short time, but he also conforms to the dispositions and the manners of those who command him. He takes his tone from the house he inhabits; like the rest of the domestics, he is disdainful among the great, and churlish among clowns. Always assiduous in serving his master, and only a friend to his friends, he is indifferent to all the rest, and declares himself openly against such as seem to be dependent like himself. He knows a beggar by his clothes, by his voice, or his gestures, and forbids his approach. When at night the guard of the house is committed to his care, he seems proud of the charge; he continues a watchful centinel, he goes his rounds, scents strangers at a distance, and gives them warning of his being upon duty. If they attempt to break in upon his territories, he becomes more fierce, flies at them, threatens, fights, and either conquers alone, or alarms those who have most interest in coming to his assistance; however, when he has conquered, he quietly reposes upon the spoil, and abstains from what he has deterred others from abusing; giving thus at once a lesson of courage, temperance, and fidelity.

From hence we see of what importance this animal is to us in a state of nature. Supposing, for a moment, that the species had not existed, how could man, without the assistance of the dog, have been able to conquer, tame, and reduce to servitude, every other animal? How could he discover, chase, and destroy, those that were noxious to him? In order to be secure, and to become master of all animated nature, it was necessary for him to begin by making a friend of a part of them; to attach such of them to himself, by kindness and caresses, as seemed fittest for obedience and active pursuit. Thus the first art employed by man, was in conciliating the favour of the dog; and the fruits of this art were, the conquest and peaceable possession of the earth.

The generality of animals have greater agility, greater swiftness, and more formidable arms, from nature, than man; their senses, and particularly that of smelling, are far more perfect: the having gained, therefore, a new assistant, particularly one whose scent is so exquisite as that of the dog, was the gaining a new sense, a new faculty, which before was wanting. The machines and instruments which we have imagined for perfecting the rest of the senses, do not approach to that already prepared by nature, by which we are enabled to find out every animal, though unseen, and thus destroy the noxious, and use the serviceable.

The dog, thus useful in himself, taken into a participation of empire, exerts a degree of superiority over all animals that require human protection. The flock and the herd obey his voice more readily even than that of the shepherd or the herdsman; he conducts them, guards them, keeps them from capriciously seeking danger, and their enemies he considers as his own. Nor is he less useful in the pursuit; when the sound of the horn, or the voice of the huntsman, calls him to the field, he testifies his pleasure by every little art, and pursues with perseverance those animals, which, when taken, he must not expect to divide. The desire of hunting is indeed natural to him, as well as to his master, since war and the chase are the only employment of savages. All animals that live upon flesh hunt by nature; the lion and the tiger, whose force is so great that they are sure to conquer, hunt alone, and without art;

the wolf, the fox, and the wild dog, hunt in packs, assist each other, and partake the spoil. But when education has perfected this talent in the domestic dog; when he has been taught by man to repress his ardour, to measure his motions, and not to exhaust his force by too sudden an exertion of it; he then hunts with method, and always with success.

"Although the wild dog, such as he was before he came under the protection of mankind, is at present utterly unknown, no such animal being now to be found in any part of the world, yet there are many that, from a domestic state, have turned savage, and entirely pursue the dictates of nature." In those deserted and uncultivated countries where the dog is found wild, they seem entirely to partake of the disposition of the wolf; they unite in large bodies, and attack the most formidable animals of the forest, the cougar, the panther, and the bison. In America, where they were originally brought by the Europeans, and abandoned by their masters, they have multiplied to such a degree, that they spread in packs over the whole country, attack all other animals, and even man himself does not pass without insult. They are there treated in the same manner as all other carnivorous animals, and killed wherever they happen to come: however, they are easily tamed: when taken home, and treated with kindness and lenity, they quickly become submissive and familiar, and continue faithfully attached to their masters. Different in this from the wolf or the fox, who, though taken never so young, are gentle only while cubs, and, as they grow older, give themselves up to their natural appetites of rapine and cruelty. In short, it may be asserted, that the dog is the only animal whose fidelity is unshaken; the only one who knows his master, and the friends of the family; the only one who instantly distinguishes a stranger; the only one who knows his name, and answers to the domestic call; the only one who seems to understand the nature of subordination, and seeks assistance; the only one who, when he misses his master, testifies his loss by his complaints; the only one who, carried to a distant place, can find the way home; the only one whose natural talents are evident, and whose education is always successful.

In the same manner, as the dog is of the most comply-

ing disposition, so also is it the most susceptible of change in its form; the varieties of this animal being too many for even the most careful describer to mention. The climate, the food, and the education, all make strong impressions upon the animal, and produce alterations in its shape, its colour, its hair, its size, and in every thing but its nature. The same dog, taken from one climate, and brought to another, seems to become another animal; but different breeds are as much separated, to all appearance, as any two animals the most distinct in nature. Nothing appears to continue constant with them, but their internal conformation; different in the figure of the body, in the length of the nose, in the shape of the head, in the length and the direction of the ears and tail, in the colour, the quality, and the quantity, of the hair; in short, different in every thing but that make of the parts which serve to continue the species, and keep the animal distinct from all others. It is this peculiar conformation, this power of producing an animal that can reproduce, that marks the kind, and approximates forms that at first sight seem never made for conjunction.

From this single consideration, therefore, we may at once pronounce all dogs to be of one kind; but which of them is the original of all the rest, which of them is the savage dog from whence such a variety of descendants have come down, is no easy matter to determine. We may easily, indeed, observe, that all those animals which are under the influence of man, are subject to great variations. Such as have been sufficiently independent, so as to choose their own climate, their own nourishment, and to pursue their own habitudes, preserve the original marks of nature, without much deviation; and it is probable, that the first of these is even at this day very well represented in their descendants. But such as man has subdued, transported from one climate to another, controlled in their manner of living and their food, have most probably been changed also in their forms; particularly the dog has felt these alterations more strongly than any other of the domestic kinds; for living more like man, he may be thus said to live more irregularly also, and, consequently, must have felt all those changes that such variety would naturally produce. Some other causes also may be assigned

for this variety in the species of the dog: as he is perpetually under the eye of his master, when accident has produced any singularity in its productions, man uses all his art to continue this peculiarity unchanged; either by breeding from such as had those singularities, or by destroying such as happened to want them; besides, as the dog produces much more frequently than some other animals, and lives a shorter time, so the chance for its varieties will be offered in greater proportion.

But which is the original animal, and which the artificial or accidental variety, is a question which, as was said, is not easily resolved. If the internal structure of dogs of different sorts be compared with each other, it will be found, except in point of size, that in this respect they are exactly the same. This, therefore, affords no criterion. If other animals be compared with the dog internally, the wolf and the fox will be found to have the most perfect resemblance; it is probable, therefore, that the dog, which most resembles the wolf or the fox externally, is the original animal of its kind; for it is natural to suppose, that as the dog most nearly resembles them internally, so he may be near them in external resemblance also, except where art or accident has altered his form. This being supposed, if we look among the number of varieties to be found in the dog, we shall not find one so like the wolf or the fox as that which is called the *shepherd's dog*. This is that dog with long coarse hair on all parts except the nose, pricked ears, and a long nose; which is common enough among us, and receives his name from being principally used in guarding and attending on sheep. This seems to be the primitive animal of his kind; and we shall be the more confirmed in this opinion if we attend to the different characters which climate produces in this animal, and the different races of dogs which are propagated in every country: and, in the first place, if we examine those countries which are still savage, or but half civilized, where it is most probable the dog, like his master, has received but few impresions from art, we shall find the shepherd's dog, or one very like him, still prevailing amongst them. The dogs that have run wild in America, and in Congou, approach this form. The dog of Siberia, Lapland, and Iceland, of the Cape of Good Hope, of Madagascar, Madura, Calicut, and Malabar, have all a

long nose, pricked ears, and resemble the shepherd's dog very nearly. In Guinea, the dog very speedily takes this form; for, at the second or third generation, the animal forgets to bark, his ears and his tail become pointed, and his hair drops off, while a coarser thinner kind comes in the place. This sort of dog is also to be found in the temperate climates in great abundance, particularly among those who, preferring usefulness to beauty, employ an animal that requires very little instruction to be serviceable. Notwithstanding this creature's deformity, his melancholy and savage air, he is superior to all the rest of his kind in instinct; and, without any teaching, naturally takes to tending flocks, with an assiduity and vigilance that at once astonishes, and yet relieves his master.

In more polished and civilized places, the dog seems to partake of the universal refinement; and, like the men, becomes more beautiful, more majestic, and more capable of assuming an education foreign to his nature. The dogs of Albany, of Greece, of Denmark, and of Ireland, are larger and stronger than those of any other kind. In France, Germany, Spain, and Italy, the dogs are of various kinds, like the men; and this variety seems formed by crossing the breed of such as are imported from various climates.

The shepherd's dog may, therefore, be considered as the primitive stock from whence these varieties are all derived. He makes the stem of that genealogical tree which has been branched out into every part of the world. This animal still continues pretty nearly in its original state among the poor in temperate climates; being transported into the colder regions, he grows less and more ugly among the Laplanders; but becomes more perfect in Iceland, Russia, and Siberia, where the climate is less rigorous, and the people more civilized. Whatever differences there may be among the dogs of these countries, they are not very considerable, as they all have straight ears, long and thick hair, a savage aspect, and do not bark either so often or so loud as dogs of the more cultivated kind.

The shepherd's dog, transported into the temperate climates, and among people entirely civilized, such as England, France, and Germany, will be divested of his savage air, his pricked ears, his rough, long, and thick hair, and, from the single influence of climate and food alone, will become either

a matin, a mastiff, or a hound. These three seem the immediate descendants of the former; and from them the other varieties are produced.

The HOUND, the HARRIER, and the BEAGLE, seem all of the same kind; for although the bitch is covered but by one of them, yet in her litters are found puppies resembling all the three. This animal, transported into Spain or Barbary, where the hair of all quadrupeds becomes soft and long, will be there converted into the land-spaniel, and the water-spaniel, and these of different sizes.

The GRAY MATIN HOUND, which is the second branch, transported to the north, becomes the great Danish dog; and this sent into the south, becomes the greyhound, of different sizes. The same transported into Ireland, the Ukraine, Tartary, Epirus, and Albania, becomes the great wolf-dog, known by the name of the Irish wolf-dog.

The MASTIFF, which is the third branch, and chiefly a native of England, when transported into Denmark, becomes the litttle Danish dog; and this little Danish dog, sent into the tropical and warm climates, becomes the animal called the TURKISH DOG, without hair. All these races, with their varieties, are produced by the influence of climate, joined to the different food, education, and shelter, which they have received among mankind. All other kinds may be considered as mongrel races, produced by the concurrence of these, and found rather by crossing the breed than by attending to the individual. "As these are extremely numerous and very different in different countries, it would be almost endless to mention the whole; besides, nothing but experience can ascertain the reality of these conjectures, although they have so much the appearance of probability; and until that gives more certain information, we must be excused from entering more minutely into the subject.

"With regard to the dogs of our country in particular, the varieties are very great, and the number every day increasing. And this must happen in a country so open by commerce to all others, and where wealth is apt to produce capricious predilection. Here the ugliest and the most useless of their kinds will be entertained merely for their singularity; and, being imported only to be looked at, they will lose even that small degree of sagacity which they possessed

in their natural climates. From this importation of foreign useless dogs, our own native breed is, I am informed, greatly degenerated, and the varieties now to be found in England much more numerous than they were in the times of Queen Elizabeth, when Doctor Caius attempted their natural history. Some of those he mentions are no longer to be found among us, although many have since been introduced, by no means so serviceable as those which have been suffered to decay.

"He divides the whole race into three kinds. The first is, the generous kind, which consists of the terrier, the harrier, and the blood-hound; the gaze-hound, the grey-hound, the leymmer, and the tumbler; all these are used for hunting. Then the spaniel, the setter, and the water-spaniel, or finder, were used for fowling; and the spaniel gentle, or lap-dog, for amusement. The second is the farm kind; consisting of the shepherd's dog and the mastiff. And the third is the mongrel kind; consisting of the wappe, the turnspit, and the dancer. To these varieties we may add at present, the bull-dog, the Dutch mastiff, the harlequin, the pointer, and the Dane, with a variety of lap-dogs, which, as they are perfectly useless, may be considered as unworthy of a name.

"The terrier is a small kind of hound,* with rough hair, made use of to force the fox or the badger out of their holes; or rather to give notice, by their barking, in what part of their kennel the fox or badger resides, when the sportsmen intend to dig them out.

"The harrier, as well as the beagle and the fox hound, are used for hunting; of all other animals, they have the quickest and most distinguishing sense of smelling. The properly breeding, matching, and training these, make up the business of many men's lives.

"The blood-hound was a dog of great use, and in high esteem among our ancestors. Its employ was to recover any game that had ecaped wounded from the hunter, or had been killed, and stolen out of the forest. But it was still more employed in hunting thieves and robbers by their footsteps. At that time, when the country was less peopled than at present, and when, consequently, the footsteps of one man were

* British Zoology.

less crossed and obliterated by those of others, this animal was very serviceable in such pursuits; but at present, when the country is every where peopled, this variety is quite worn out; probably because it was found of less service than formerly.

"The gaze-hound hunted, like our greyhounds, by the eye, and not by the scent. It chased indifferently the fox, hare, or buck. It would select from the herd the fattest and fairest deer, pursue it by the eye, and if lost recover it again with amazing sagacity. This species is now lost or unknown among us.

"The greyhound is very well known at present, and was formerly held in such estimation, that it was the peculiar companion of a gentleman; who, in the times of semi-barbarism, was known by his horse, his hawk, and his greyhound. Persons under a certain rank of life are forbidden, by some late game-laws, from keeping this animal; wherefore, to disguise it the better, they cut off its tail.

"The leymmer is a species now unknown to us. It hunted both by scent and sight, and was led in a leyme or thong, from whence it received its name.

"The tumbler was less than the hound, more scraggy, and had pricked ears; so that by the description it seems to answer to the modern lurcher. This took its prey by mere cunning, depending neither on the goodness of its nose nor its swiftness. If it came into a warren, it neither barked nor ran on the rabbits; but, seemingly inattentive, approached sufficiently near till it came within reach, and then seized them by a sudden spring.

"The land-spaniel, which probably had its name from Spain, where it might have acquired the softness of its hair, is well known at present. There are two varieties of this kind; namely, the slater, used in hawking to spring the game; and the setter, that crouches down when it scents the birds, till the net be drawn over them. I have read somewhere that the famous poet, Lord Surry, was the first who taught dogs to set; it being an amusement to this day only known in England.

"The water-spaniel was another species used in fowling. This seems to be the most docile of all the dog kind; and this docility is particularly owing to his natural attachment to man. Many other kinds will not bear correction; but

this patient creature, though very fierce to strangers, seems unalterable in his affections; and blows and ill usage seem only to increase his regard.

"The lap-dog, at the time of Dr. Caius, was of Maltese breed; at present it comes from different countries; in general, the more awkward or extraordinary these are, the more they are prized.

"The shepherd's dog has been already mentioned, and as for the mastiff, he is too common to require a description. Doctor Caius tells us, that three of these were reckoned a match for a bear, and four for a lion. However, we are told that three of them overcame a lion in the times of King James the First; two of them being disabled in the combat, the third obliged the lion to seek for safety by flight.

"As to the last division, namely, of the wappe, the turn-spit, and the dancer, these were mongrels, of no certain shape, and made use of only to alarm the family, or, being taught a variety of tricks, were carried about as a show.

"With regard to those of later importation, the bull-dog, as Mr. Buffon supposes, is a breed between the small Dane and the English mastiff. The large Dane is the tallest dog that is generally bred in England. It is somewhat between a mastiff and a greyhound in shape, being more slender than the one, and much stronger than the other. They are chiefly used rather for show than service, being neither good in the yard nor the field. The highest are most esteemed; and they generally cut off their ears to improve their figure, as some absurdly suppose. The harlequin is not much unlike the small Dane, being an useless animal, somewhat between an Italian greyhound and a Dutch mastiff. To these several others might be added, such as the pug-dog, the black breed, and the pointer; but, in fact, the varieties are so numerous as to fatigue even the most ardent curiosity."*

Of these of the foreign kinds, I shall mention only three,

* To these may be added the Newfoundland dog, so remarkable for its sagacity, and faithful attachment to its master: and the Siberian dog, so well known in Kamtschatka for drawing sledges over the ice. The former of these is a large handsome animal, with a remarkably benevolent and pleasing countenance. They are web-footed, and can swim with great ease and swiftness.

which are more remarkable than any of the rest. The lion-dog greatly resembles that animal, in miniature, from whence it takes the name. The hair of the fore part of the body is extremely long, while that of the hinder part is as short. The nose is short, the tail long, and tufted at the point, so that, in all these particulars, it is entirely like the lion. However, it differs very much from that fierce animal in nature and disposition, being one of the smallest animals of its kind, extremely feeble, timid, and inactive. It comes originally from Malta, where it is found so small that women carry it about in their sleeves.

That animal, falsely called the *Turkish dog*, differs greatly from all the rest of the kind, in being entirely without hair. The skin, which is perfectly bare, is of a flesh colour, with brown spots; and their figure, at first view, is rather disgusting. These seem to be of the small Danish breed, brought into a warm climate, and there, by a succession of generations, divested of their hair. For this reason, they are extremely chilly, and unable to endure the cold of our climate; and even in the midst of summer they continue to shiver as we see men in a frosty day. Their spots are brown, as was said, well-marked, and easily distinguishable in summer, but in the cold of winter they entirely disappear. They are called the Turkish breed, although brought from a much warmer climate; for some of them have been known to come from the warmest parts of Africa and the East Indies.

"The last variety, and the most wonderful of all that I shall mention, is the great Irish wolf-dog, that may be considered as the first of the canine species. This animal, which is very rare, even in the only country in the world where it is to be found, is rather kept for show than use, there being neither wolves nor any other formidable beasts of prey in Ireland, that seem to require so powerful an antagonist. The wolf-dog is therefore bred up in the houses of the great, or such gentlemen as choose to keep him as a curiosity, being neither good for hunting the hare, the fox, nor the stag, and equally unserviceable as a house-dog. Nevertheless, he is extremely beautiful and majestic to appearance, being the greatest of the dog kind to be seen in the world. The largest of those I have seen, and I have seen above a dozen, was about four feet high, or as tall as a

calf of a year old. He was made extremely like a greyhound, but rather more robust, and inclining to the figure of the French matin, or the great Dane. His eye was mild, his colour white, and his nature seemed heavy and phlegmatic. This I ascribed to his having been bred up to a size beyond his nature; for we see in man, and all other animals, that such as are overgrown are neither so vigorous nor alert as those of more moderate stature. The greatest pains have been taken with these to enlarge the breed, both by food and matching. This end was effectually obtained, indeed; for the size was enormous; but, as it seemed to me, at the expense of the animal's fierceness, vigilance, and sagacity.—However, I was informed otherwise; the gentleman who bred them assuring me that a mastiff would be nothing when opposed to one of them, who generally seized their antagonist by the back: he added, that they would worry the strongest bull-dogs in a few minutes to death. But this strength did not appear either in their figure or their inclinations; they seemed rather more timid than the ordinary race of dogs; and their skin was much thinner, and consequently less fitted for combat. Whether, with these disadvantages, they were capable, as I was told, of singly coping with bears, others may determine; however, they have but few opportunities, in their own country, of exerting their strength, as all wild carnivorous animals there are only of the vermin kind. Mr. Buffon seems to be of opinion that these are the true Molossian dogs of the ancients: he gives no reason for this opinion; and I am apt to think it ill-grounded. Not to trouble the reader with a tedious critical disquisition, which I have all along avoided, it will be sufficient to observe, that Nemesianus, in giving directions for the choice of a bitch, advises to have one of Spartan or Molossian breed; and, among several other perfections, he says that the ears should be dependent, and fluctuate as she runs.* This, however, is by no means the case with the Irish wolf-dog, whose ears resemble those of the greyhound, and are far from fluctuating with the animal's

* Elige tunc cursu facilem, facilemque recursu,
In Lacedæmonio natam seu rure Molosso—
Renibus ampla satis validis, diductaque coxas
Cuique nimis molles fluitent in cursibus aures.

NEMESIAN

motions. But of whatever kinds these dogs may be, whether known among the ancients, or whether produced by a later mixture, they are now almost quite worn away, and are very rarely to be met with even in Ireland. If carried to other countries, they soon degenerate; and even at home, unless great care be taken, they quickly alter. They were once employed in clearing the island of wolves, which infested it in great plenty; but these being destroyed, the dogs also are wearing away, as if Nature meant to blot out the species, when they had no longer any services to perform.

"In this manner several kinds of animals fade from the face of Nature, that were once well known, but are now seen no longer. The enormous elk of the same kingdom, that, by its horns, could not have been less than eleven feet high, the wolf, and even the wolf-dog, are extinct, or only continued in such a manner as to prove their former plenty and existence. From hence, it is probable, that many of the nobler kinds of dogs, of which the ancients have given us such beautiful descriptions, are now utterly unknown; since among the whole breed we have not one that will venture to engage the lion or the tiger in single combat. The English bull-dog is perhaps the bravest of the kind; but what are his most boasted exploits to those mentioned of the Epirotic dogs by Pliny, or the Indian dogs by Ælian? The latter gives us a description of a combat between a dog and a lion, which I will take leave to translate.

"When Alexander was pursuing his conquests in India, one of the principal men of that country was desirous of shewing him the value of the dogs which his country produced. Bringing his dog into the king's presence, he ordered a stag to be let loose before him, which the dog, despising as an unworthy enemy, remained quite regardless of the animal, and never once stirred from his place. His master then ordered a wild boar to be set out; but the dog thought even this a despicable foe, and remained calm and regardless as before. He was next tried with a bear; but still despising his enemy, he only waited for an object more worthy of his courage and his force. At last they brought forth a tremendous lion, and then the dog acknowledged his antagonist, and prepared for combat. He instantly discovered a degree of ungovernable ardour; and, flying at

the lion with fury, seized him by the throat, and totally disabled him from resistance. Upon this the Indian, who was desirous of surprising the king, and knowing the constancy and bravery of his dog, ordered his tail to be cut off: which was easily performed, as the bold animal was employed in holding the lion. He next ordered one of his legs to be broken; which, however, did not in the least abate the dog's ardour, but he still kept his hold as before. Another leg was then broken; but the dog, as if he had suffered no pain, only pressed the lion still the more. In this cruel manner, all his legs were cut off, without abating his courage; and at last, when even his head was separated from his body, the jaws seemed to keep their former hold. A sight so cruel did not fail to affect the king with very strong emotions, at once pitying the dog's fate, and admiring his fortitude. Upon which the Indian, seeing him thus moved, presented him with four dogs of the same kind, which, in some measure, alleviated his uneasiness for the loss of the former.

"The breed of dogs, however, in that country, is at present very much inferior to what this story seems to imply; since, in many places, instead of dogs, they have animals of the cat kind for hunting. In other places, also, this admirable and faithful animal, instead of being applied to his natural uses, is only kept to be eaten. All over China there are dog-butchers, and shambles appointed for selling their flesh. In Canton, particularly, there is a street appointed for that purpose; and what is very extraordinary, wherever a dog-butcher appears, all the dogs of the place are sure to be in full cry after him; they know their enemy, and persecute him as far as they are able." Along the coasts of Guinea, their flesh is esteemed a delicacy by the Negroes; and they will give one of their cows for a dog. But, among this barbarous and brutal people, scarce any thing that has life comes amiss; and they may well take up with a dog, since they consider toads, lizards, and even the flesh of the tiger itself, as a dainty. It may, perhaps, happen that the flesh of this animal, which is so indifferent in the temperate climates, may assume a better quality in those which are more warm: but it is more than probable that the diversity is rather in man than in the flesh of the dog; since in the cold countries the flesh is eaten with equal appetite by the

savages; and they have their dog-feasts in the same manner as we have ours for venison.

In our climate, the wild animals that most approach the dog are the wolf and the fox; these, in their internal conformation, greatly resemble each other, and yet in their natures are very distinct. The ancients asserted that they bred together; and I am assured, by credible persons, that there are many animals in this country bred between a dog and a fox. However, all the endeavours of Mr. Buffon to make them engender, as he assures us, were ineffectual. For this purpose, he bred up a young wolf, taken in the woods, at two months old, with a matin dog of the same age. They were shut up together, without any other, in a large yard, where they had a shelter for retiring. They neither of them knew any other individual of their kind, nor even any other man, but he who had the charge of feeding them. In this manner they were kept for three years; still with the same attention, and without constraining or tying them up. During the first year the young animals played with each other continually, and seemed to love each other very much. In the second year, they began to dispute about their victuals, although they were given more than they could use. The quarrel always began on the wolf's side. They were brought their food, which consisted of flesh and bones, upon a large wooden platter, which was laid on the ground. Just as it was put down, the wolf, instead of falling to the meat, began by driving off the dog; and took the platter in its teeth so expertly, that it let nothing of what it contained fall upon the ground, and in this manner carried it off; but as the wolf could not entirely escape, it was frequently seen to run with the platter round the yard five or six times, still carrying it in a position that none of its contents could fall. In this manner it would continue running, only now and then stopping to take breath, until the dog coming up, the wolf would leave the victuals to attack him. The dog, however, was the stronger of the two, but as it was more gentle, in order to secure him from the wolf's attack, he had a collar put round his neck. In the third year, the quarrels of these ill-paired associates were more vehement, and their combats more frequent; the wolf, therefore, had a collar put about its neck, as well as the dog, who began to be more fierce and unmerciful. During the two first years, neither

seemed to testify the least tendency towards engendering; and it was not till the end of the third, that the wolf, which was the female, shewed the natural desire, but without abating either in its fierceness or obstinacy. This appetite rather increased than repressed their mutual animosity; they became every day more untractable and ferocious, and nothing was heard between them but the sounds of rage and resentment. They both, in less than three weeks, became remarkably lean, without ever approaching each other but to combat. At length, their quarrels became so desperate, that the dog killed the wolf, who was become more weak and feeble; and he was soon after himself obliged to be killed, for, upon being set at liberty, he instantly flew upon every animal he met, fowls, dogs, and even men themselves not escaping his savage fury.

The same experiment was tried upon foxes, taken young, but with no better success; they were never found to engender with dogs; and our learned naturalist seems to be of opinion that their natures are too opposite ever to provoke mutual desire. One thing, however, must be remarked, that the animals on which he tried his experiments, were rather too old when taken, and had partly acquired their natural savage appetites, before they came into his possession. The wolf, as he acknowledges, was two or three months old before it was caught, and the foxes were taken in traps. It may, therefore, be easily supposed, that nothing could ever after thoroughly tame those creatures that had been suckled in the wild state, and had caught all the habitudes of the dam. I have seen these animals, when taken earlier in the woods, become very tame; and, indeed, they rather were displeasing by being too familiar than too shy. It were to be wished that the experiment were tried upon such as these; and it is more than probable that it would produce the desired success. Nevertheless, these experiments are sufficient to prove that neither the wolf nor the fox are of the same nature with the dog, but each of a species perfectly distinct, and their joint produce most probably unfruitful.

The dog, when first whelped, is not a completely finished animal. In this kind, as in all the rest which bring forth many at a time, the young are not so perfect as in those which bring forth but one or two. They are always produced with the eyes closed, the lids being held together,

not by sticking, but by a kind of thin membrane, which is torn as soon as the upper eye-lid becomes strong enough to raise it from the under. In general, their eyes are not opened till ten or twelve days old. During that time, the bones of the skull are not completed, the body is puffed up, the nose is short, and the whole form but ill sketched out. In less than a month the puppy begins to use all its senses; and from thence makes hasty advances to its perfection. At the fourth month, the dog loses some of his teeth, as in other animals, and these are renewed by such as never fall. The number of these amount to forty-two, which is twelve more than is found in any of the cat kind, which are known never to have above thirty. The teeth of the dog being his great and only weapon, are formed in a manner much more serviceable than those of the former; and there is scarce any quadruped that has a greater facility in rending, cutting, or chewing its food. He cuts with his incisors or fore-teeth, he holds with his four great canine teeth, and he chews his meat with his grinders; these are fourteen in number, and so placed, that, when the jaws are shut, there remains a distance between them, so that the dog, by opening his mouth ever so wide, does not lose the power of his jaws. But it is otherwise in the cat kind, whose incisors, or cutting-teeth, are very small, and whose grinding teeth, when brought together, touch more closely than those of the dog, and, consequently, have less power. Thus, for instance, I can squeeze any thing more forcibly between my thumb and fore-finger, where the distance is greater, than between any other two fingers, whose distance from each other is less.

This animal is capable of reproducing at the age of twelve months,* goes nine weeks with young, and lives to about the age of twelve years. Few quadrupeds are less delicate in their food; and yet there are many kinds of birds which the dog will not venture to touch. He is even known, although in a savage state, to abstain from injuring some, which one might suppose he had every reason to oppose.

* To this description I will beg leave to add a few particulars from Linnæus, as I find them in the original. "Vomitua gramina purgatur; cacat supra lapidem. Album græcum antisepticum summum. Mingit ad latus (this, however, not till the animal is nine months old) cum hospite sæpe centies. Odorat anum alterius. Procis rixantibus crudelis. Menstruans coit cum variis. Mordet illa illos. Cohæret copula junctus."

The dogs and the vultures which live wild about Grand Cairo in Egypt (for the Mahometan law has expelled this useful animal from human society) continue together in a very sociable and friendly manner.* As they are both useful in devouring such carcases as might otherwise putrefy, and thus infect the air, the inhabitants supply them with provisions every day, in order to keep them near the city. Upon these occasions, the quadrupeds and birds are often seen together, tearing the same piece of flesh, without the least enmity; on the contrary, they are known to live together with a kind of affection, and bring up their young in the same nest.

Although the dog is a voracious animal, yet he can bear hunger for a very long time. We have an instance, in the Memoirs of the Academy of Sciences, of this kind, in which a bitch that had been forgotten in a country-house, lived forty days without any other nourishment than the wool of a quilt which she had torn in pieces. It should seem that water is more necessary to the dog than food; he drinks often, though not abundantly; and it is commonly believed, that when abridged in water, he runs mad. This dreadful malady, the consequences of which are so well known, is the greatest inconvenience that results from the keeping this faithful domestic. But it is a disorder by no means so frequent as the terrors of the timorous would suppose; the dog has been often accused of madness, without a fair trial; and some persons have been supposed to receive their deaths from his bite, when either their own ill-grounded fears, or their natural disorders, were the true cause.†

THE WOLF.

The dog and the wolf are so very much alike internally, that the most expert anatomists can scarcely perceive the difference; and it may be asserted also, that, externally, some dogs more nearly resemble the wolf than they do each other. It was this strong similitude that first led some

* Hasselquist Iter. Palestin. p. 232.

† The following curious circumstance is attested by the celebrated Leibnitz. A little boy, the son of a peasant of Saxony, fancying he perceived in his dog's voice an indistinct resemblance of certain words, took it into his head to teach him to speak. The dog was then about three years old; and was at length made to articulate no less than thirty words; calling distinctly for tea, coffee, chocolate, &c. It was necessary, however, that the words should be first pronounced to him each time, which he as it were echoed to his preceptor.

naturalists to consider them as the same animal, and to look upon the wolf as the dog in its state of savage freedom: however, this opinion is entertained no longer; the natural antipathy those two animals bear to each other; the longer time which the wolf goes with young than the dog, the one going over a hundred days, and the other not quite sixty; the longer period of life in the former than the latter, the wolf living twenty years, the dog not fifteen; all sufficiently point out a distinction, and draw a line that must for ever keep them asunder.

The wolf, from the tip of the nose to the insertion of the tail, is about three feet seven inches long, and about two feet five inches high; which shews him to be larger than our great breed of mastiffs, which are seldom found to be above three feet by two. His colour is a mixture of black, brown, and gray, extremely rough and hard, but mixed towards the roots with a kind of ash-coloured fur. In comparing him to any of our well-known breed of dogs, the great Dane or mongrel greyhound, for instance, he will appear to have the legs shorter, the head larger, the muzzle thicker, the eyes smaller, and more separated from each other, and the ears shorter and straighter. He appears in every respect stronger than the dog; and the length of his hair contributes still more to his robust appearance. The feature which principally distinguishes the visage of the wolf from that of the dog is the eye, which opens slantingly upwards in the same direction with the nose; whereas, in the dog, it opens more at right angles with the nose, as in man. The tail, also, in this animal, is long and bushy; and he carries it rather more between his hind legs than the dog is seen to do. The colour of the eye-balls in the wolf are of a fiery green, and gives his visage a fierce and formidable air, which his natural disposition does by no means contradict.*

The wolf is one of those animals whose appetite for animal food is the most vehement; and whose means of satisfying this appetite are the most various. Nature has furnished him with strength, cunning, agility, and all those requisites which fit an animal for pursuing, overtaking,

* The rest of this history of the wolf is taken from Mr. Buffon; and I look upon it as a complete model for natural history. If I add or differ, I mark it as usual.

and conquering its prey; and yet, with all these, the wolf most frequently dies of hunger, for he is the declared enemy of man. Being long proscribed, and a reward offered for his head, he is obliged to fly from human habitations, and to live in the forest, where the few wild animals to be found there escape him either by their swiftness or their art; or are supplied in too small a proportion to satisfy his rapacity. He is naturally dull and cowardly; but frequently disappointed, and as often reduced to the verge of famine, he becomes ingenious from want, and courageous from necessity. When pressed with hunger, he braves danger, and comes to attack those animals which are under the protection of man, particularly such as he can readily carry away; lambs, sheep, or even dogs themselves, for all animal food becomes then equally agreeable. When this excursion has succeeded, he often returns to the charge, until having been wounded, or hard pressed by the dogs or the shepherds, he hides himself by day in the thickest coverts, and only ventures out at night; he then sallies forth over the country, keeps peering round the villages, carries off such animals as are not under protection, attacks the sheepfolds, scratches up and undermines the thresholds of doors where they are housed, enters furious, and destroys all before he begins to fix upon and carry off his prey. When these sallies do not succeed, he then returns to the thickest part of the forest, content to pursue those smaller animals, which, even when taken, afford him but a scanty supply. He there goes regularly to work, follows by the scent, opens to the view, still keeps following, hopeless himself of overtaking the prey, but expecting that some other wolf will come in to his assistance, and then content to share the spoil. At last, when his necessities are very urgent, he boldly faces certain destruction; he attacks women and children, and sometimes ventures even to fall upon men, becomes furious by his continual agitations, and ends his life in madness.

The wolf, as well externally as internally, so nearly resembles the dog, that he seems modelled upon the same plan; and yet he only offers the reverse of the medal. If his form be like, his nature is so different, that he only preserves the ill qualities of the dog, without any of his good ones. Indeed, they are so different in their disposi-

tions, that no two animals can have a more perfect antipathy to each other. A young dog shudders at the sight of a wolf; he even shuns his scent, which, though unknown, is so repugnant to his nature, that he comes trembling to take protection near his master. A dog who is stronger, and who knows his strength, bristles up at the sight, testifies his animosity, attacks him with courage, endeavours to put him to flight, and does all in his power to rid himself of a presence that is hateful to him. They never meet without either flying or fighting; fighting for life and death, and without mercy on either side. If the wolf is the stronger, he tears and devours his prey: the dog, on the contrary, is more generous, and contents himself with his victory; he does not seem to think that *the body of a dead enemy smells well;* he leaves him where he falls, to serve as food for birds of prey, or for other wolves, since they devour each other; and when one wolf happens to be desperately wounded, the rest track him by his blood, and are sure to shew him no mercy.

The dog, even in his savage state, is not cruel; he is easily tamed, and continues firmly attached to his master. The wolf, when taken young, becomes tame, but never has an attachment. Nature is stronger in him than education; he resumes with age his natural dispositions, and returns as soon as he can to the woods from whence he was taken. Dogs, even of the dullest kinds, seek the company of other animals; they are naturally disposed to follow and accompany other creatures besides themselves; and even by instinct, without any education, take to the care of flocks and herds. The wolf, on the contrary, is the enemy of all society; he does not even keep much company with those of his kind. When they are seen in packs together, it is not to be considered as a peaceful society, but a combination for war; they testify their hostile intentions by their loud howlings, and, by their fierceness, discover a project for attacking some great animal, such as a stag or a bull, or to destroy some more redoubtable watch-dog. The instant their military expedition is completed, their society is at an end; they then part, and each returns in silence to his solitary retreat. There is not even any strong attachments between the male and female; they seek each other only once a year, and remain

but a few days together: they always couple in winter; at which time several males are seen following one female, and this association is still more bloody than the former: they dispute most cruelly, growl, bark, fight, and tear each other; and it sometimes happens that the majority kill the wolf which has been chiefly preferred by the female. It is usual for the she-wolf to fly from them all with him she has chosen; and watches this opportunity when the rest are asleep.

The season for coupling does not continue above twelve or fifteen days; and usually commences among the oldest, those which are young being later in their desires. The males have no fixed time for engendering; they pass from one female to the other, beginning at the end of December, and ending at the latter end of February. The time of pregnancy is about three months and a half; and the young wolves are found from the latter end of April to the beginning of July. The long continuance of the wolf's pregnancy is sufficient to make a distinction between it and the dog, did not also the fiery fierceness of the eyes, the howl instead of barking, and the greater duration of its life, leave no doubt of its being an animal of its own particular species. In other respects, however, they are entirely alike; the wolf couples exactly like the dog, the parts are formed in the same manner, and their separation hindered by the same cause. When the she-wolves are near their time of bringing forth, they seek some very tufted spot, in the thickest part of the forest; in the middle of this they make a small opening, cutting away the thorns and briars with their teeth, and afterwards carry thither a great quantity of moss, which they form into a bed for their young ones. They generally bring forth five or six, and sometimes even to nine at a litter. The cubs are brought forth, like those of the bitch, with the eyes closed; the dam suckles them for some weeks, and teaches them betimes to eat flesh, which she prepares for them by chewing it first herself. Some time after she brings them stronger food, hares, partridges, and birds yet alive. The young wolves begin by playing with them, and end by killing them. The dam then strips them of their feathers, tears them in pieces, and gives to each of them a share. They do not leave the den where they

have been littered, till they are six weeks or two months old. They then follow the old one, who leads them to drink to the trunk of some old tree, where the water has settled, or at some pool in the neighbourhood. If she apprehends any danger, she instantly conceals them in the first convenient place, or brings them back to their former retreat. In this manner they follow her for some months: when they are attacked, she defends them with all her strength, and more than usual ferocity. Although, at other times, more timorous than the male, at that season she becomes bold and fearless; willing perhaps to teach the young ones future courage by her own example. It is not till they are about ten or twelve months old, and until they have shed their first teeth, and completed the new, that she thinks them in a capacity to shift for themselves. Then, when they have acquired arms from Nature, and have learned industry and courage from her example, she declines all future care of them, being again engaged in bringing up a new progeny.

The males and females are in a capacity to engender when two years old. It is probable that the females of this species, as well as of most others, are sooner completed than the males; but this is certain, that they never desire to copulate until their second winter: from whence we may suppose that they live fifteen or twenty years; for allowing three years for their complete growth, this multiplied by seven, gives them a life of twenty-one; most animals, as has been observed, living about seven times the number of years which they take to come to perfection. Of this, however, there is as yet no certainty, no more than of what huntsmen assert, that in all the litters there are more males than females. From them also we learn, that there are some of the males who attach themselves to the female, who accompany her during her gestation, until the time of bringing forth, when she hides the place of her retreat from the male, lest he should devour her cubs. But after this, when they are brought forth, that he then takes the same care of them as the female, carries them provisions, and, if the dam should happen to be killed, rears them up in her stead.

The wolf grows gray as he grows old, and his teeth wear, like those of most other animals, by using. He

sleeps when his belly is full, or when he is fatigued, rather by day than night; and always, like the dog, is very easily waked. He drinks frequently; and in times of drought, when there is no water to be found in the trunks of old trees, or in the pools about the forest, he comes often, in the day, down to the brooks, or the lakes in the plain. Although very voracious, he supports hunger for a long time, and often lives four or five days without food, provided he be supplied with water.

The wolf has great strength, particularly in his fore parts, in the muscles of his neck and jaws. He carries off a sheep in his mouth without letting it touch the ground, and runs with it much swifter than the shepherds who pursue him; so that nothing but the dogs can overtake, and oblige him to quit his prey. He bites cruelly, and always with greater vehemence in proportion as he is least resisted; for he uses precautions with such animals as attempt to stand upon the defensive. He is ever cowardly, and never fights but when under a necessity of satisfying hunger, or making good his retreat. When he is wounded by a bullet, he is heard to cry out; and yet, when surrounded by the peasants, and attacked with clubs, he never howls as a dog under correction, but defends himself in silence, and dies as hard as he lived.

His nature is, in fact, more savage than that of the dog; he has less sensibility, and greater strength. He travels, runs, and keeps plundering for whole days and nights together. He is in a manner indefatigable; and perhaps of all animals he is the most difficult to be hunted down. The dog is good-natured and courageous; the wolf, though savage, is ever fearful. If he happens to be caught in a pit-fall, he is for some time so frightened and astonished, that he may be killed without offering to resist, or taken alive without much danger. At that instant, one may clap a collar round his neck, muzzle him, and drag him along, without his ever giving the least signs of anger or resentment. At all other times he has his senses in great perfection; his eye, his ear, and particularly his sense of smelling, which is even superior to the two former. He smells a carcase at more than a league's distance; he also perceives living animals a great way off, and follows them a long time upon the scent. Whenever he leaves the

wood, he always takes care to go out against the wind. When just come to its extremity, he stops to examine, by his smell, on all sides, the emanations that may come either from his enemy or his prey, which he very nicely distinguishes. He prefers those animals which he kills himself to those he finds dead; and yet he does not disdain these when no better is to be had. He is particularly fond of human flesh; and perhaps, if he were sufficiently powerful, he would eat no other. Wolves have been seen following armies, and arriving in numbers upon the field of battle, where they devoured such dead bodies as were left upon the field, or but negligently interred. These, when once accustomed to human flesh, ever after seek particularly to attack mankind, and choose to fall upon the shepherd rather than his flock. We have had a late instance of two or three of these keeping a whole province, for more than a month, in a continual alarm.

It sometimes happens that a whole country is called out to extirpate these most dangerous invaders. The hunting the wolf is a favourite diversion among the great of some countries; and it must be confessed it seems to be the most useful of any. These animals are distinguished by the huntsman into the *young wolf*, the *old wolf*, and the *great wolf*. They are known by the prints of their feet; the older the wolf, the larger the track he leaves. That of the female is narrower and longer than that of the male. It is necessary to have a very good starter to put up the wolf; and it is even convenient to use every art to encourage him in his pursuit; for all dogs have a natural repugnance against this animal, and are but cold in their endeavours. When the wolf is once put up, it is then proper to have greyhounds to let fly at him, in leashes, one after the other. The first leash is sent after him in the beginning, seconded by a man on horseback; the second are let loose about half a mile farther, and the third when the rest of the dogs come up with and begin to bait him. He for a long time keeps them off, stands his ground, threatens them on all sides, and often gets away; but usually the hunters arriving, come in aid of the dogs, and help to dispatch him with their cutlasses. When the animal is killed, the dogs testify no appetite to enjoy their victory, but leave

him where he falls, a frightful spectacle, and even in death hideous.

The wolf is sometimes also hunted with harriers; but as he always goes straight forward, and often holds his speed for a whole day together, this kind of chase is tedious and disagreeable, at least if the harriers are not assisted by greyhounds, who may harass him at every view. Several other arts have also been used to take and destroy this noxious animal. He is surrounded and wounded by men and large house-dogs; he is secured in traps; he is poisoned by carcases prepared and placed for that purpose; and is caught in pit-falls. "Gesner tells us of a friar, a woman, and a wolf, being taken in one of these, all in the same night. The woman lost her senses by the fright, the friar his reputation, and the wolf his life." All these disasters, however, do not prevent this animal's multiplying in great numbers, particularly in countries where the woods are plenty. France, Spain, and Italy, are greatly infested with them; but England, Ireland, and Scotland, are happily set free.

King Edgar is said to be the first who attempted to rid this kingdom of such disagreeable inmates, by commuting the punishment for certain crimes into the acceptance of a number of wolves' tongues from each criminal.* However, some centuries after, these animals were again increased to such a degree, as to become the object of royal attention; accordingly Edward the First issued out his mandate to one Peter Corbet to superintend and assist in the destruction of them. They are said to have infested Ireland long after they were extirpated in England; however, the oldest men in that country remember nothing of these animals; and it is probable that there have been none there for more than a century past. Scotland also is totally free.

The colour of this animal differs according to the different climates where it is bred, and often changes even in the same country. Besides the common wolves, which are found in France and Germany, there are others with thicker hair, inclining to yellow. These are more savage and less noxious than the former, neither approaching the flocks nor habitations, and living rather by the chase than

* British Zoology, p. 62.

rapine. In the northern climates there are found some quite black, and some white all over. The former are larger and stronger than those of any other kinds.

The species is very much diffused in every part of the world, being found in Asia, Africa, and in America, as well as Europe. The wolves of Senegal resemble those of France, except that they are larger and much fiercer than those of Europe. Those of Egypt are smaller than those of Greece. In the East, the wolf is trained up for a show, being taught to dance and play tricks; and one of these thus educated often sells for four or five hundred crowns. "It is said that in Lapland the wolf will never attack a rein-deer that is seen haltered; for this wary animal, being well acquainted with the nature of a trap, suspects one wherever it perceives a rope. However, when he sees the deer entirely at liberty, he seldom fails to destroy it.

"The wolf of North America is blacker and much less than those in other parts of the world, and approaches nearer in form to the dog than those of the ordinary kind * In fact, they were made use of as such by the savages, till the Europeans introduced others; and even now, on the remoter shores, or the more inland parts of the country, the savages still make use of these animals in hunting. They are very tame and gentle; and those of this kind that are wild, are neither so large nor so fierce as an European wolf, nor do they ever attack mankind. They go together in large packs by night to hunt the deer, which they do as well as any dogs in England; and it is confidently asserted that one of them is sufficient to run down a deer.† Whenever they are seen along the banks of those rivers near which the wandering natives pitch their huts, it is taken for granted that the bison or the deer are not far off: and the savages affirm that the wolves come with the tidings, in order to have the garbage, after the animal has been killed by the hunters. Catesby adds a circumstance relative to these animals, which, if true, invalidates many of Mr. Buffon's observations in the foregoing history. He asserts, that these being the only dogs used by the Americans, before the arrival of the Europeans among them, they have since engendered together, and

* Brookes's Natural History, vol. i. p. 198.

† Dictionnaire Raisonnée, Loup.

that their breed has become prolific; which proves the dog and the wolf to be of the same species. It were to be wished that this fact were better ascertained; we should then know to a certainty in what degree the dog and wolf resemble each other, as well in nature as in conformation; we might then, perhaps, be enabled to improve the breed of our dogs, by bringing them back to their native forms and instincts; we might, by crossing the strain, restore that race of those bold animals, which the ancients assure us were more than a match for the lion."

However this animal may be useful in North America, the wolf of Europe is a very noxious animal, and scarcely any thing belonging to him is good, except his skin. Of this the furriers make a covering that is warm and durable, though coarse and unsightly. His flesh is very indifferent, and seems to be disliked by all other animals, no other creature being known to eat the wolf's flesh except the wolf himself. He breathes a most fœtid vapour from his jaws, as his food is indiscriminate, often putrid, and seldom cleanly. In short, every way offensive, a savage aspect, a frightful howl, an insupportable odour, a perverse disposition, fierce habits, he is hateful while living, and useless when dead.*

THE FOX.

THE fox very exactly resembles the wolf and the dog internally; and although he differs greatly from both in size and carriage, yet when we come to examine his shapes minutely, there will appear to be very little difference in the description. Were, for instance, a painter to draw from a natural historian's exactest description the figure of a dog, a wolf, and a fox, without having ever seen either, he would be very apt to confound all these animals together; or rather he would be unable to catch those peculiar outlines that no description can supply.

* The wolf is sometimes affected with madness, in symptoms and consequences exactly similar to that which affects the dog. This disease, as it happens to them in the depth of winter, cannot be attributed to the great heat of the dog-days. In the northern parts of the world, they frequently in the spring get upon the fields of ice adjoining the sea, for the purpose of preying upon the young seals, which they there find asleep: but vast pieces of the ice occasionally detaching itself from the mass, they are carried with it to a great distance from the land, where they perish amidst the most hideous and dreadful howlings.

Words will never give any person an exact idea of forms any way irregular; for although they be extremely just and precise, yet the numberless discriminations to be attended to will confound each other, and we shall no more conceive the precise form, than we should be able to tell when one pebble more was added or taken away from a thousand. To conceive, therefore, how the fox differs in form from the wolf or the dog, it is necessary to see all three, or at least to supply the defects of description by examining the difference in a print.

The fox is of a slenderer make than the wolf, and not near so large; for as the former is above three feet and a half long, so the other is not above two feet three inches. The tail of the fox also is longer in proportion, and more bushy; its nose is smaller, and approaching more nearly to that of the greyhound, and its hair softer. On the other hand, it differs from the dog in having its eyes obliquely situated, like those of the wolf; its ears are directed also in the same manner as those of the wolf, and its head is equally large in proportion to its size. It differs still more from the dog in its strong offensive smell, which is peculiar to the species, and often the cause of their death. However, some are ignorantly of opinion that it will keep off infectious diseases, and they preserve this animal near their habitations for that very purpose.

The fox has since the beginning been famous for his cunning and his arts, and he partly merits his reputation.* Without attempting to oppose either the dogs or the shepherds, without attacking the flock, or alarming the village, he finds an easier way to subsist, and gains by his address what is denied to his strength or courage. Patient and prudent, he waits the opportunity for depredation, and varies his conduct with every occasion. His whole study is his preservation; although nearly as indefatigable, and actually more swift than the wolf, he does not entirely trust to either, but makes himself an asylum, to which he retires in case of necessity; where he shelters himself from danger, and brings up his young.

As among men, those who lead a domestic life are more civilized and more endued with wisdom than those who

* Buffon, Renard

wander from place to place; so in the inferior ranks of animated nature, the taking possession of a home supposes a degree of instinct which others are without.* The choice of the situation for this domicil, the art of making it convenient, of hiding its entrance, and securing it against more powerful animals, are all so many marks of superior skill and industry. The fox is furnished with both, and turns them to his advantage. He generally keeps his kennel at the edge of the wood, and yet within an easy journey of some neighbouring cottage. From thence he listens to the crowing of the cock, and the cackling of the domestic fowls. He scents them at a distance; he seizes his opportunity, conceals his approaches, creeps slyly along, makes the attack, and seldom returns without his booty. If he be able to get into the yard, he begins by levelling all the poultry without remorse; and carrying off a part of the spoil, hides it at some convenient distance, and again returns to the charge. Taking off another fowl in the same manner, he hides that also, but not in the same place; and this he practises for several times together, until the approach of day, or the noise of the domestics, give him warning to retire. The same arts are practised when he finds birds entangled in springes laid for them by the fowler; the fox takes care to be beforehand, very expertly takes the bird out of the snare, hides it for three or four days, and knows very exactly when and where to return to avail himself of the hidden treasure. He is equally alert in seizing the young hares and rabbits before they have strength enough to escape him; and when the old ones are wounded and fatigued, he is sure to come upon them in their moments of distress, and to shew them no mercy. In the same manner he finds out birds' nests, seizes the partridge and the quail while sitting, and destroys a large quantity of game. The wolf is most hurtful to the peasant, but the fox to the gentleman. In short, nothing that can be eaten seems to come amiss; rats, mice, serpents, toads, and lizards. He will, when urged by hunger, eat vegetables and insects; and those that live near the sea-coasts will, for want of other food, eat crabs, shrimps, and shell-fish. The hedge-hog in vain rolls itself up into a ball to oppose him: this determined glutton teases it until it is obliged to appear

* Buffon, Renard.

uncovered, and then he devours it. The wasp and the wild-bee are attacked with equal success. Although at first they fly out upon their invader, and actually oblige him to retire this is but for a few minutes, until he has rolled himself upon the ground, and thus crushed such as stick to his skin; he then returns to the charge, and at last, by perseverance, obliges them to abandon their combs; which he greedily devours, both wax and honey.

The chase of the fox requires less preparation than that of the wolf, and it is also more pleasant and amusing. As dogs have a natural repugnance to pursue the wolf, so they are equally alert in following the fox; which they prefer even to the chase of the hare or the buck. The huntsmen, as upon other occasions, have their cant terms for every part of this chase. The fox the first year is called *a cub;* the second, *a fox;* and the third, an *old fox;* his tail is called the *brush* or *drag;* and his excrement, the *biliting*. He is usually pursued by a large kind of harrier or hound, assisted by terriers, or a smaller breed, that follow him into his kennel, and attack him there. The instant he perceives himself pursued, he makes to his kennel, and takes refuge at the bottom of it, where for a while he loses the cry of his enemies; but the whole pack coming to the mouth, redouble their vehemence and rage, and the little terrier boldly ventures in. It happens that the kennel is made under a rock, or among the roots of old trees; and in such cases the fox cannot be dug out, nor is the terrier able to contend with him at the bottom of his hole. By this contrivance he continues secure; but when he can be dug out, the usual way is to carry him in a bag to some open country, and there set him loose before the hounds. The hounds and the men follow, barking and shouting wherever he runs; and the body being strongly employed, the mind has not time to make any reflection on the futility of the pursuit. What adds to this entertainment is the strong scent which the fox leaves, that always keeps up a full cry; although as his scent is stronger than that of the hare, it is much sooner evaporated. His shifts to escape, when all retreat is cut off to his kennel, are various and surprising. He always chooses the most woody country, and takes those paths that are most embarrassed with thorns and briars. He does not double, nor use the unavailing shifts of the hare; but flies in a direct

line before the hounds, though at no very great distance; manages his strength; takes to the low and plashy grounds, where the scent will be less apt to lie; and at last, when overtaken, he defends himself with desperate obstinacy, and fights in silence to the very last gasp.

The fox, though resembling the dog in many respects, is nevertheless very distinct in his nature, refusing to engender with it; and though not testifying the antipathy of the wolf, yet discovering nothing more than an indifference. This animal also brings forth fewer at a time than the dog, and that but once a year. Its litter is generally from four to six, and seldom less than three. The female goes with young about six weeks, and seldom stirs out while pregnant, but makes a bed for her young, and takes every precaution to prepare for their production. When she finds the place of their retreat discovered, and that her young have been disturbed during her absence, she removes them one after the other in her mouth, and endeavours to find them out a place of better security. A remarkable instance of this animal's parental affection happened while I was writing this history, in the county of Essex. A she-fox that had, as it should seem, but one cub, was unkennelled by a gentleman's hounds near Chelmsford, and hotly pursued. In such cases, when her own life was in imminent peril, one would think it was not a time to consult the safety of her young; however, the poor animal, braving every danger, rather than leave her cub behind to be worried by the dogs, took it up in her mouth, and ran with it in this manner for some miles. At last, taking her way through a farmer's yard, she was assaulted by a mastiff, and at last obliged to drop her cub, which was taken up by the farmer. I was not displeased to hear that this faithful creature escaped the pursuit, and at last got off in safety. The cubs of the fox are born blind, like those of the dog; they are eighteen months or two years in coming to perfection, and live about twelve or fourteen years.

As the fox makes war upon all animals, so all others seem to make war upon him. The dog hunts him with peculiar acrimony; the wolf is still a greater and more necessitous enemy, who pursues him to his very retreat. Some pretend to say that, to keep the wolf away, the fox lays at the mouth of its kennel a certain herb, to which the wolf has a particular aversion. This, which no doubt is a fable, at least

shews that these two animals are as much enemies to each other as to all the rest of animated nature. But the fox is not hunted by quadrupeds alone; for the birds, who know him for their mortal enemy, attend him in his excursions, and give each other warning of their approaching danger. The daw, the magpie, and the blackbird, conduct him along, perching on the hedges as he creeps below, and, with their cries and notes of hostility, apprise all other animals to beware; a caution which they perfectly understand, and put into practice. The hunters themselves are often informed by the birds of the place of his retreat, and set the dogs into those thickets where they see them particularly noisy and querulous. So that it is the fate of this petty plunderer to be detested by every rank of animals: all the weaker classes shun, and all the stronger pursue him.

The fox, of all wild animals, is most subject to the influence of climate; and there are found as many varieties in this kind almost as in any of the domestic animals.* The generality of foxes, as is well known, are red; but there are some, though not in England, of a grayish cast; and Mr. Buffon asserts, that the tip of the tail in all foxes is white; which, however, is not so in those of this country. There are only three varieties of this animal in Great Britain, and these are rather established upon a difference of size than of colour or form. The greyhound fox is the largest, tallest, and boldest; and will attack a grown sheep. The mastiff fox is less, but more strongly built. The cur fox is the least and most common; he lurks about hedges and out-houses, and is the most pernicious of the three to the peasant and the farmer.

In the colder countries round the pole, the foxes are of all colours; black, blue, gray, iron-gray, silver-gray, white, white with red legs, white with black heads, white with the tip of the tail black, red with the throat and belly entirely white, and lastly with a stripe of black running along the back, and another crossing it at the shoulders.† The common kind, however, is more universally diffused than any of the former, being found in Europe, in the temperate climates of Asia, and also in America; they are very rare in Africa, and in the countries lying under the torrid zone.

* Buffon, Renard. † Ibid.

Those travellers who talk of having seen them at Calicut, and other parts of Southern India, have mistaken the jackal for the fox. The fur of the white fox is held in no great estimation, because the hair falls off. The blue fox-skins are bought up with great avidity, from their scarceness; but the black fox-skin is of all others the most esteemed, a single skin often selling for forty or fifty crowns. The hair of these is so disposed, that it is impossible to tell which way the grain lies; for if we hold the skin by the head, the hair hangs to the tail; and if we hold it by the tail, it hangs down equally smooth and even to the head. These are often made into men's muffs, and are at once very beautiful and warm. In our temperate climate, however, furs are of very little service, there being scarce any weather so severe in England from which our ordinary clothes may not very well defend us.

THE JACKAL.

The jackal is one of the commonest wild animals in the East; and yet there is scarcely any less known in Europe, or more confusedly described by natural historians. In general, we are assured that it resembles the fox in figure and disposition, but we are still ignorant of those nice distinctions by which it is known to be of a different species. It is said to be of the size of a middling dog, resembling the fox in the hinder parts, particularly the tail; and the wolf in the fore parts, especially the nose. Its legs are shorter than those of the fox, and its colour is of a bright yellow, or sorrel, as we express it in horses. This is the reason it has been called in Latin the *golden wolf;* a name, however, which is entirely unknown in the countries where they are most common.

The species of the jackal is diffused all over Asia, and is found also in most parts of Africa, seeming to take up the place of the wolf, which, in those countries, is not so common. There seem to be many varieties among them: those of the warmest climates appear to be the largest, and their colour is rather of a reddish brown, than of that beautiful yellow by which the smaller jackals are chiefly distinguished.

Although the species of the wolf approaches very near to that of the dog, yet the jackal seems to be placed between

them: to the savage fierceness of the wolf, it adds the impudent familiarity of the dog.* Its cry is a howl, mixed with barking, and a lamentation resembling that of human distress. It is more noisy in its pursuits even than the dog, and more voracious than the wolf. The jackal never goes alone, but always in a pack of forty or fifty together. These unite regularly every day to form a combination against the rest of the forest. Nothing then can escape them; they are content to take up with the smallest animals; and yet, when thus united, they have courage to face the largest. They seem very little afraid of mankind, but pursue their game to the very doors, without testifying either attachment or apprehension. They enter insolently into the sheep-folds, the yards, and the stables; and, when they can find nothing else, devour the leather-harness, boots, and shoes, and run off with what they have not time to swallow.

They not only attack the living, but the dead. They scratch up with their feet the new-made graves, and devour the corpse, how putrid soever. In those countries, therefore, where they abound, they are obliged to beat the earth over the grave, and mix it with thorns, to prevent the jackals from scraping it away. They always assist each other, as well in this employment of exhumation, as in that of the chase. While they are at this dreary work, they exhort each other by a most mournful cry, resembling that of children under chastisement; and when they have thus dug up the body, they share it amicably between them. These, like all other savage animals, when they have once tasted of human flesh, can never after refrain from pursuing mankind. They watch the burying-grounds, follow armies, and keep in the rear of caravans. They may be considered as the vulture of the quadruped kind; every thing that once had animal life seems equally agreeable to them; the most putrid substances are greedily devoured; dried leather, and any thing that has been rubbed with grease, how insipid soever in itself, is sufficient to make the whole go down.

They hide themselves in holes by day, and seldom appear abroad till night-fall, when the jackal that has first hit upon the scent of some larger beast gives notice to the rest by a howl, which it repeats as it runs; while all the rest that are

* Buffon, vol. xxvii. p. 52.

within hearing pack in to its assistance. The gazelle, or whatever other beast it may be, finding itself pursued, makes off towards the houses and the towns; hoping, by that means, to deter its pursuers from following: but hunger gives the jackal the same degree of boldness that fear gives the gazelle, and it pursues even to the verge of the city, and often along the streets. The gazelle, however, by this means, most frequently escapes; for the inhabitants sallying out, often disturb the jackal in the chase; and as it hunts by the scent, when once driven off, it never recovers it again. In this manner we see how experience prompts the gazelle, which is naturally a very timid animal, and particularly fearful of man, to take refuge near him, considering him as the least dangerous enemy and often escaping by his assistance.

But man is not the only intruder upon the jackal's industry and pursuits. The lion, the tiger, and the panther, whose appetites are superior to their swiftness, attend to its call, and follow in silence at some distance behind.* The jackal pursues the whole night with unceasing assiduity, keeping up the cry, and with great perseverance at last tires down its prey; but just at the moment it supposes itself going to share the fruits of its labour, the lion or the leopard comes in, satiates himself upon the spoil, and his poor provider must be content with the bare carcase he leaves behind. It is not to be wondered at, therefore, if the jackal be voracious, since it so seldom has a sufficiency; nor that it feeds on putrid substances, since it is not permitted to feast on what it has newly killed. Besides these enemies, the jackal has another to cope with; for between him and the dog there is an irreconcileable antipathy, and they never part without an engagement. The Indian peasants often chase them as we do foxes; and have learned, by experience, when they have got a lion or a tiger in their rear. Upon such occasions they keep their dogs close, as they would be no match for such formidable animals, and endeavour to put them to flight with their cries. When the lion is dismissed, they more easily cope with the jackal, who is as stupid as it is impudent, and seems much better fitted for pursuing than retreating. It sometimes happens that one of them steals silently into

* Linnæi Systema, p. 60.

an out-house, to seize the poultry, or devour the furniture; but hearing others in full cry at a distance, without thought, it instantly answers the call, and thus betrays its own depredations. The peasants sally out upon it, and the foolish animal finds, too late, that its instinct was too powerful for its safety.

THE ISATIS.

As the jackal is a sort of intermediate species between the dog and the wolf,* so the isatis may be considered as placed between the dog and the fox. This animal has hitherto been supposed to be only a variety of the latter; but from the latest observations, there is no doubt of their being perfectly distinct. The isatis is very common in all the northern countries bordering upon the Icy Sea; and is seldom found, except in the coldest countries. It extremely resembles the fox, in the form of its body, and the length of its tail; and a dog, in the make of its head and the position of its eyes. The hair of these animals is softer than that of a common fox; some are blue, some are white at one season, and at another of a russet brown. Although the whole of its hair be two inches long, thick, tufted, and glossy, yet the under jaw is entirely without any, and the skin appears bare in that part.

This animal can bear only the coldest climates, and is chiefly seen along the coasts of the Icy Sea, and upon the banks of the great rivers that discharge themselves therein. It is chiefly fond of living in the open country, and seldom seen in the forest, being mostly found in the mountainous and naked regions of Norway, Siberia, and Lapland. It burrows like the fox; and, when with young, the female retires to her kennel, in the same manner as the fox is seen to do. These holes, which are very narrow, and extremely deep, have many outlets. They are kept very clean, and are bedded at the bottom with moss, for the animal to be more at its ease. Its manner of coupling, time of gestation, and number of young, are all similar to what is found in the fox; and it usually brings forth at the end of May or the beginning of June.

Such are the particulars in which this animal differs from those of the dog kind, and in which it resembles

* In this description I have followed Mr. Buffon.

them: but its most striking peculiarity remains still to be mentioned; namely, its changing its colour, and being seen at one time brown, and at another perfectly white.—As was already said, some are naturally blue, and their colour never changes; but such as are to be white, are, when brought forth, of a yellow hue, which in the beginning of September is changed to white, all except along the top of the back, along which runs a stripe of brown, and another crossing it down the shoulders, at which time the animal is called the *crossed fox;* however, this brown cross totally disappears before winter, and then the creature is all over white, and its fur is two inches long: this, about the beginning of May, again begins to fall; and the moulting is completed about the middle of July, when the isatis becomes brown once more. The fur of this animal is of no value, unless it be killed in winter.

THE HYÆNA.

The hyæna is the last animal I shall mention among those of the dog kind, which it, in many respects, resembles, although too strongly marked to be strictly reduced to any type. The hyæna is nearly of the size of a wolf; and has some similitude to that animal in the shape of its head and body. The head, at first sight, does not appear to differ, except that the ears of the hyæna are longer, and more without hair; but, upon observing more closely, we shall find the head broader, the nose flatter, and not so pointed. The eyes are not placed obliquely, but more like those of a dog. The legs, particularly the hinder, are longer than those either of the dog or the wolf, and different from all other quadrupeds, in having but four toes, as well on the fore-feet as on the hinder. Its hair is of a dirty grayish, marked with black, disposed in waves down its body. Its tail is short, with pretty long hair; and immediately under it, above the anus, there is an opening into a kind of glandular pouch, which separates a substance of the consistence, but not of the odour, of civet. This opening might have given rise to the error of the ancients, who asserted that this animal was every year alternately male and female. Such are the most striking distinctions of the hyæna, as given us by naturalists;

which, nevertheless, convey but a very confused idea of the peculiarity of its form. Its manner of holding the head seems remarkable; somewhat like a dog pursuing the scent, with the nose near the ground. The head being held thus low, the back appears elevated, like that of the hog, which, with a long bristly band of hair that runs all along, gives it a good deal the air of that animal; and, it is probable, that from this similitude it first took its name; the word *huoina* being Greek, and derived from *hus*, which signifies a *sow*.

But no words can give an adequate idea of this animal's figure, deformity, and fierceness; more savage and untameable than any other quadruped, it seems to be for ever in a state of rage or rapacity, for ever growling, except when receiving its food. Its eyes then glisten, the bristles of its back all stand upright, its head hangs low, and yet its teeth appear; all which give it a most frightful aspect, which a dreadful howl tends to heighten. This, which I have often heard, is very peculiar: its beginning resembles the voice of a man moaning, and its latter part as if he were making a violent effort to vomit. As it is loud and frequent, it might, perhaps, have been sometimes mistaken for that of a human voice in distress, and have given rise to the accounts of the ancients, who tell us, that the hyæna makes its moan to attract unwary travellers, and then to destroy them: however this be, it seems the most untractable, and, for its size, the most terrible of all other quadrupeds; nor does its courage fall short of its ferocity; it defends itself against the lion, is a match for the panther, attacks the ounce, and seldom fails to conquer.

It is an obscene and solitary animal, to be found chiefly in the most desolate and uncultivated parts of the torrid zone, of which it is a native.* It resides in the caverns of mountains, in the clefts of rocks, or in dens that it has formed for itself under the earth. Though taken never so young, it cannot be tamed; it lives by depredation, like the wolf, but is much stronger, and more courageous.—It sometimes attacks man, carries off cattle, follows the flock, breaks open the sheep-cots by night, and ravages with insatiable voracity. Its eyes shine by night; and it is asserted, not without great appearance of truth, that it sees

* Buffon.

better by night than by day. When destitute of other provision, it scrapes up the graves, and devours the dead bodies, how putrid soever. To these dispositions, which are sufficiently noxious and formidable, the ancients have added numberless others, which are long since known to be fables: as, for instance, that the hyæna was male and female alternately; that having brought forth and suckled its young, it then changed sexes for a year, and became a male. This, as was mentioned above, could only proceed from the opening under the tail, which all animals of this species are found to have; and which is found in the same manner in no other quadruped, except the badger. There is, in the weasel kind indeed, an opening, but it is lower down, and not placed above the anus, as in the badger and the hyæna. Some have said that this animal changed the colour of its hair at will; others, that a stone was found in its eye, which, put under a man's tongue, gave him the gift of prophecy; some have said that it had no joints in the neck, which, however, all quadrupeds are known to have; and some, that the shadow of the hyæna kept dogs from barking. These, among many other absurdities, have been asserted of this quadruped; and which I mention to shew the natural disposition of mankind, to load those that are already but too guilty, with accumulated reproach.

CHAP. III.

OF ANIMALS OF THE WEASEL KIND.

Having described the bolder ranks of carnivorous animals, we now come to a minuter and more feeble class, less formidable indeed than any of the former, but far more numerous, and, in proportion to their size, more active and enterprising. The weasel kind may be particularly distinguished from other carnivorous animals, by the length and slenderness of their bodies, which are so fitted as to wind, like worms, into very small openings, after their prey; and hence also they have received the name of vermin, from their similitude to the worm in this particular. These animals differ from all of the cat kind, in the formation and disposition of their claws, which, as in the dog

kinds, they can neither draw in nor extend at pleasure, as cats are known to do. They differ from the dog kind, in being clothed rather with fur than hair; and although some varieties of the fox may resemble them in this particular, yet the coat of the latter is longer, stronger, and always more resembling hair. Beside these distinctions, all animals of the weasel kind have glands placed near the anus, that either open into or beneath it, furnishing a substance that, in some, has the most offensive smell in nature, in others, the most pleasing perfume. All of this kind are still more marked by their habitudes and dispositions, than their external form; cruel, voracious, and cowardly, they subsist only by theft, and find their chief protection in their minuteness. They are all, from the shortness of their legs, slow in pursuit; and, therefore, owe their support to their patience, assiduity, and cunning. As their prey is precarious, they live a long time without food; and if they happen to fall in where it is in plenty, they instantly destroy all about them before they begin to satisfy their appetite, and suck the blood of every animal before they begin to touch its flesh.

These are the marks common to this kind, all the species of which have a most striking resemblance to each other; and he that has seen one, in some measure may be said to have seen all. The chief distinction in this numerous class of animals, is to be taken from the size; for no words can give the minute irregularities of that outline by which one species is to be distinguished from that which is next it. I will begin, therefore, with the least and the best known of this kind, and still marking the size, will proceed gradually to larger and larger, until we come from the weasel to the glutton, which I take to be the largest of all. The weasel will serve as a model for all the rest; and, indeed, the points in which they differ from this little animal, are but very inconsiderable.

The WEASEL,* as was said, is the smallest of this numerous tribe; its length not exceeding seven inches, from the tip of the nose to the insertion of the tail. This length, however, seems to be very great, if we compare it with the height of the animal, which is not above an inch and a half. In measuring the wolf, we find him to be not above

* British Zoology, vol. i. p. 83.

once and a half as long as he is high; in observing the weasel, we find it near five times as long as it is high, which shews an amazing disproportion. The tail also, which is bushy, is two inches and a half long, and adds to the apparent length of this little animal's body. The colour of the weasel is a pale reddish brown on the back and sides, but white under the throat and the belly. It has whiskers like a cat; and thirty-two teeth, which is two more than any of the cat kind; and these also seem better adapted for tearing and chewing, than those of the cat are. The eyes are little and black. The ears short, broad, and roundish; and have a fold at the lower part, which makes them look as if they were double. Beneath the corners of the mouth, on each jaw, is a spot of brown.

This animal, though very diminutive to appearance, is, nevertheless, a very formidable enemy to quadrupeds an hundred times its own size. It is very common and well known in most parts of this country; but seems held in very different estimation in different parts of it. In those places where sheep or lambs are bred, the weasel is a most noxious inmate, and every art is used to destroy it; on the contrary, in places where agriculture is chiefly followed, the weasel is considered as a friend that thins the number of such vermin as chiefly live upon corn: however, in all places, it is one of the most untameable and untractable animals in the world.* When kept in a cage, either for the purposes of amusement or inspection, it will not touch any part of its victuals while any body looks on. It keeps in a continual agitation, and seems frighted so much at the sight of mankind, that it will die, if not permitted to hide itself from their presence. For this purpose, it must be provided, in its cage, with a sufficient quantity of wool or hay, in which it may conceal itself, and where it may carry whatever it has got to eat; which, however, it will not touch until it begins to putrefy. In this state it is seen to pass three parts of the day in sleeping; and reserves the night for its times of exercise and eating.

In its wild state, the night is likewise the time during which it may be properly said to live. At the approach of evening, it is seen stealing from its hole, and creeping

* Buffon, vol. xv. p. 37.

about the farmer's yard for its prey. If it enters the place where poultry are kept, it never attacks the cocks or the old hens, but immediately aims at the young ones. It does not eat its prey on the place, but, after killing it by a single bite near the head, and with a wound so small that the place can scarcely be perceived, it carries it off to its young, or its retreat. It also breaks and sucks the eggs, and sometimes kills the hen that attempts to defend them. It is remarkably active; and, in a confined place, scarcely any animal can escape it. It will run up the sides of walls with such facility, that no place is secure from it; and its body is so small, that there is scarcely any hole but what it can wind through. During the summer, its excursions are more extensive; but in winter, it chiefly confines itself in barns and farm-yards, where it remains till spring, and where it brings forth its young. All this season it makes war upon the rats and mice, with still greater success than the cat; for being more active and slender, it pursues them into their holes, and, after a short resistance, destroys them. It creeps also into pigeon-holes, destroys the young, catches sparrows, and all kinds of small birds; and, if it has brought forth its young, hunts with still greater boldness and avidity. In summer, it ventures farther from the house; and particularly goes into those places where the rat, its chiefest prey, goes before it. Accordingly, it is found in the lower grounds, by the side of waters, near mills, and is often seen to hide its young in the hollow of a tree.

The female takes every precaution to make an easy bed for her little ones: she lines the bottom of her hole with grass, hay, leaves, and moss, and generally brings forth from three to five at a time. All animals of this, as well as those of the dog kind, bring forth their young with closed eyes: but they very soon acquire strength sufficient to follow the dam in her excursions, and assist in her projects of petty rapine. The weasel, like all others of its kind, does not run on equably, but moves by bounding; and when it climbs a tree, by a single spring it gets a good way from the ground. It jumps in the same manner upon its prey; and, having an extremely limber body, evades the attempts of much stronger animals to seize it.

This animal, like all of its kind, has a very strong smell;

and that of the weasel is peculiarly fœtid. This scent is very distinguishable in those creatures, when they void their excrement; for the glands which furnish this fœtid substance, which is of the consistence of suet, open directly into the orifice of the anus, and taint the excrement with the strong effluvia. The weasel smells more strongly in summer than in winter; and more abominably when irritated or pursued, than when at its ease. It always preys in silence, and never has a cry except when struck, and then it has a rough kind of squeaking, which at once expresses resentment and pain. Its appetite for animal food never forsakes it; and it seems even to take a pleasure in the vicinity of putrefaction. Mr. Buffon tells us of one of them being found, with three young ones, in the carcase of a wolf that was grown putrid, and that had been hung up by the hind legs, as a terror to others. Into this horrid retreat the weasel thought proper to retire to bring forth her young; she had furnished the cavity with hay, grass, and leaves; and the young were just brought forth when they were discoverd by a peasant passing that way.

THE ERMINE, OR STOAT.

Next to the weasel in size, and perfectly alike in figure, is the ermine. The difference between this and the former animal is so very small, that many, and among the rest Linnæus, who gives but one description of both, have confounded the two kinds together. However, their differences are sufficient to induce later naturalists to suppose the two kinds distinct; and as their lights seem preferable, we choose to follow their descriptions.*

The stoat, or ermine, differs from the weasel in size, being usually nine inches long; whereas the former is not much above six. The tail of the ermine is always tipped with black, is longer in proportion to the body, and more furnished with hair. The edges of the ears and the ends of the toes in this animal are of a yellowish white; and although it is of the same colour with the weasel, being of a lightish brown, and though both this animal, as well as the weasel, in the most northern parts of Europe, changes

* Buffon, British Zoology.

its colour in winter, and becomes white; yet even then the weasel may be easily distinguished from the ermine by the tip of the tail, which in the latter is always black.

It is well known that the fur of the ermine is the most valuable of any hitherto known; and it is in winter only that this little animal has it of the proper colour and consistence. In summer, the ermine, as was said before, is brown, and it may at that time more properly be called the *stoat*. There are few so unacquainted with quadrupeds as not to perceive this change of colour in the hair, which, in some degree, obtains in them all. The horse, the cow, and the goat, all manifestly change colour in the beginning of summer, the old long hair falling off, and a shorter coat of hair appearing in its room, generally of a darker colour, and yet more glossy. What obtains in our temperate climate is seen to prevail still more strongly in those regions where the winters are long and severe, and the summers short, and yet generally hot in an extreme degree. The animal has strength enough during that season to throw off a warm coat of fur, which would but incommode it, and continues for two or three months in a state somewhat resembling the ordinary quadrupeds of the milder climates. At the approach of winter, however, the cold increasing, the coat of hair seems to thicken in proportion; from being coarse and short, it lengthens and grows finer, while multitudes of smaller hairs grow up between the longer, thicken the coat, and give it all that warmth and softness which are so much valued in the furs of the northern animals.

It is no easy matter to account for this remarkable warmth of the furs of northern quadrupeds, or how they come to be furnished with such an abundant covering. It is easy enough, indeed, to say that Nature fits them thus for the climate; and like an indulgent mother, when she exposes them to the rigour of an intemperate winter, supplies them with a covering against its inclemency. But this is only flourishing: it is not easy, I say, to tell how Nature comes to furnish them in this manner. A few particulars on this subject are all that we yet know. It is observable among quadrupeds, as well as even among the human species itself, that a thin sparing diet is apt to produce hair; children that have been ill fed, famished dogs and horses, are more hairy than others whose food has been more plentiful. This may,

therefore, be one cause that the animals of the north, in winter, are more hairy than those of the milder climates. At that season, the whole country is covered with deep snow, and the provisions which these creatures are able to procure can be but precarious and scanty. Its becoming finer may also proceed from the severity of the cold, that contracts the pores of the skin, and the hair consequently takes the shape of the aperture through which it grows, as wires are made smaller by being drawn through a smaller orifice. However this may be, all the animals of the arctic climates may be said to have their winter and summer garments, except very far to the north, as in Greenland, where the cold is so continually intense, and the food so scarce, that neither the bears nor foxes change colour.*

The ermine, as was said, is remarkable among these for the softness, the closeness, and the warmth, of its fur. It is brown in summer, like the weasel, and changes colour before the winter is begun, becoming a beautiful cream colour, all except the tip of the tail, as was said before, which still continues black. Mr. Daubenton had one of these brought him with its white winter fur, which he put into a cage and kept, in order to observe the manner of moulting its hair. He received it in the beginning of March; in a very short time it began to shed its coat, and a mixture of brown was seen to prevail among the white; so that, at the ninth of the same month, its head was nearly become of a reddish brown. Day after day this colour appeared to extend, at first along the neck, and down the back, in the manner of a stripe of about half an inch broad. The fore part of the legs then assumed the same colour; a part of the head, the thighs, and the tail, were the last that changed; but at the end of the month there was no white remaining, except on those parts which are always white in this species, particularly the throat and the belly. However, he had not the pleasure of seeing this animal resume its former whiteness, although he kept it for above two years; which, without doubt, was owing to its imprisoned state; this colour being partly owing to its stinted food, and partly to the rigour of the season. During its state of confinement, this little animal always continued very wild and untractable; forever in a

* Krantz's History of Greenland, vol. i. p. 73.

state of violent agitation, except when asleep, which it often continued for three parts of the day. Except for its most disagreeable scent, it was an extremely pretty creature, its eyes sprightly, its physiognomy pleasant, and its motions so swift that the eye could scarcely attend them. It was fed with eggs and flesh, but it always let them putrefy before it touched either. As some of this kind are known to be fond of honey, it was tried to feed this animal with such food for a while; after having, for three or four days, deprived it of other food, it ate of this, and died shortly after; a strong proof of its being a distinct species from the pole-cat or the martin, who feed upon honey, but otherwise pretty much resemble the ermine in their figure and dispositions.

In the north of Europe and Siberia their skins make a valuable article of commerce, and they are found there much more frequently than among us. In Siberia they burrow in the fields, and are taken in traps baited with flesh. In Norway they are either shot with blunt arrows, or taken in traps made of two flat stones, one being propped with a stick, to which is fastened a baited string, and when the animals attempt to pull this away, the stone drops and crushes them to death. This animal is sometimes found white in Great Britain, and is then called a white weasel. Its furs, however, among us are of no value, having neither the thickness, the closeness, nor the whiteness, of those which come from Siberia. The fur of the ermine, in every country, changes by time; for, as much of its beautiful whiteness is given it by certain arts known to the furriers, so its natural colour returns, and its former whiteness can never be restored again.

THE FERRET.

The animal next in size to the ermine is the ferret; which is a kind of domestic in Europe, though said to be originally brought from Africa into Spain, which being a country abounding in rabbits, required an animal of this kind more than any other: however this be, it is not to be found at present among us, except in its domestic state; and it is chiefly kept tame, for the purposes of the warren.

The ferret is about one foot long, being nearly four inches longer than the weasel. It resembles that animal in the

slenderness of its body, and the shortness of its legs; but its nose is sharper, and its body more slender, in proportion to its length. The ferret is commonly of a cream colour; but they are also found of all the colours of the weasel kind; white, blackish, brown, and party-coloured. Those that are of the whitish kind have their eyes red, as is almost general with all animals entirely of that colour. But its principal distinction from the weasel, is the length of the hair on its tail, which is much longer in the ferret than the weasel. Words will not well express the other distinctions; and what might take up a page in dull discrimination, a single glance of the eye, when the animals themselves are presented, can discover.

As this animal is a native of the torrid zone,* so it cannot bear the rigours of our climate without care and shelter; and it generally repays the trouble of its keeping, by its great agility in the warren. It is naturally such an enemy of the rabbit kind, that if a dead rabbit be presented to a young ferret, although it has never seen one before, it instantly attacks and bites it with an appearance of rapacity. If the rabbit be living, the ferret is still more eager, seizes it by the neck, winds itself round it, and continues to suck its blood, till it be satiated.

Their chief use in warrens is to enter the holes, and drive the rabbits into the nets that are prepared for them at the mouth. For this purpose, the ferret is muzzled; otherwise, instead of driving out the rabbit, it would content itself with killing and sucking its blood at the bottom of the hole; but, by this contrivance, being rendered unable to seize its prey, the rabbit escapes from its claws, and instantly makes to the mouth of the hole with such precipitation, that it is inextricably entangled in the net placed there for its reception. It often happens, however, that the ferret disengages itself of its muzzle, and then it is most commonly lost, unless it be dug out; for, finding all its wants satisfied in the warren, it never thinks of returning to the owner, but continues to lead a rapacious solitary life while the summer continues, and dies with the cold of the winter. In order to bring the ferret from his hole, the owners often burn straw and other substances at the mouth;

* Buffon.

they also beat above to terrify it: but this does not always succeed; for as there are often several issues to each hole, the ferret is affected neither by the noise nor the smoke, but continues secure at the bottom, sleeping the greatest part of the time, and waking only to satisfy the calls of hunger.

The female of this species* is sensibly less than the male, whom she seeks with great ardour, and, it is said, often dies without being admitted. They are usually kept in boxes, with wool, of which they make themselves a warm bed, that serves to defend them from the rigour of the climate. They sleep almost continually; and the instant they awake, they seem eager for food. They are usually fed with bread and milk. They breed twice a year. Some of them devour their young as soon as brought forth, and then become fit for the male again. Their number is usually from five to six at a litter; and this is said to consist of more females than males. Upon the whole, this is an useful, but a disagreeable and offensive animal; its scent is fœtid, its nature voracious, it is tame without any attachment, and such is its appetite for blood, that it has been known to attack and kill children in the cradle. It is very easy to be irritated; and, although at all times its smell is very offensive, it then is much more so; and its bite is very difficult of cure.

To the ferret kind we may add an animal which Mr. Buffon calls the *vansire*, the skin of which was sent him stuffed from Madagascar. It was thirteen inches long, a good deal resembling the ferret in figure, but differing in the number of its grinding-teeth, which amounted to twelve; whereas in the ferret there are but eight: it differed also in colour, being of a dark brown, and exactly the same on all parts of its body. Of this animal, so nearly resembling the ferret, we have no other history but the mere description of its figure; and in a quadruped whose kind is so strongly marked, perhaps this is sufficient to satisfy curiosity.

* Buffon.

THE POLECAT.

The Polecat is larger than the weasel, the ermine, or the ferret, being one foot five inches long; whereas the weasel is but six inches, the ermine nine, and the ferret eleven inches. It so much resembles the ferret in form, that some have been of opinion they were one and the same animal; nevertheless, there are a sufficient number of distinctions between them: it is, in the first place, larger than the ferret; it is not quite so slender, and has a blunter nose; it differs also internally, having but fourteen ribs, whereas the ferret has fifteen; and wants one of the breast-bones, which is found in the ferret: however, warreners assert that the polecat will mix with the ferret; and they are sometimes obliged to procure an intercourse between these two animals to improve the breed of the latter, which, by long confinement, is sometimes seen to abate of its rapacious disposition. Mr. Buffon denies that the ferret will admit the polecat; yet gives a variety, under the name of both animals, which may very probably be a spurious race between the two.

However this be, the polecat seems by much the more pleasing animal of the two; for although the long slender shape of all these vermin tribes gives them a very disagreeable appearance, yet the softness and colour of the hair in some of them atones for the defect, and renders them, if not pretty, at least not frightful. The polecat, for the most part, is of a deep chocolate colour; it is white about the mouth; the ears are short, rounded, and tipped with white; a little beyond the corners of the mouth a stripe begins, which runs backward, partly white and partly yellow: its hair, like that of all this class, is of two sorts, the long and the furry; but in this animal the two kinds are of different colours; the longest is black, and the shorter yellowish:* the throat, feet, and tail, are blacker than any other parts of the body; the claws are white underneath, and brown above; and its tail is about two inches and a half.

It is very destructive to young game of all kinds;† but

* Ray's Synopsis. † British Zoology, vol. i. p. 78.

the rabbit seems to be its favourite prey: a single polecat is often sufficient to destroy a whole warren; for, with that insatiable thirst for blood which is natural to all the weasel kind, it kills much more than it can devour; and I have seen twenty rabbits at a time taken out dead, which they had destroyed, and that by a wound which was hardly perceptible. Their size, however, which is so much larger than the weasel, renders their retreats near houses much more precarious; although I have seen them burrow near a village, so as scarcely to be extirpated. But, in general, they reside in woods or thick brakes, making holes under ground of about two yards deep, commonly ending among the roots of large trees, for greater security. In winter they frequent houses, and make a common practice of robbing the hen-roost and the dairy.

The polecat is particularly destructive among pigeons,* when it gets into a dove-house; without making so much noise as the weasel, it does a great deal more mischief; it dispatches each with a single wound in the head; and, after killing a great number, and satiating itself with their blood, it then begins to think of carrying them home. This it carefully performs, going and returning, and bringing them one by one to its hole; but if it should happen that the opening by which it got into the dove-house be not large enough for the body of the pigeon to get through, this mischievous creature contents itself with carrying away the heads, and makes a most delicious feast upon the brains.

It is not less fond of honey; attacking the hives in winter, and forcing the bees away. It does not remove far from houses in winter, as its prey is not so easily found in the woods during that season. The female brings forth her young in summer, to the number of five or six at a time; these she soon trains to her own rapacious habits, supplying the want of milk, which no carnivorous quadruped has in plenty, with the blood of such animals as she happens to seize. The fur of this animal is considered as soft and warm; yet it is in less estimation than some of a much inferior kind, from its offensive smell, which can never be wholly removed or suppressed. The polecat seems to be an

* Buffon.

inhabitant of the temperate climates,* scarcely any being found towards the north, and but very few in the warmer latitudes. The species appears to be confined in Europe, from Poland to Italy. It is certain that these animals are afraid of the cold, as they are often seen to come into houses in winter, and as their tracks are never found in the snow, near their retreats. It is probable, also, that they are afraid of heat, as they are but thinly scattered in the southern climates.

THE MARTIN.

The Martin is a larger animal than any of the former, being generally eighteen inches long, and the tail ten more. It differs from the polecat, in being about four or five inches longer; its tail also is longer in proportion, and more bushy at the end; its nose is flatter; its cry is sharper and more piercing; its colours are more elegant; and, what still adds to their beauty, its scent, very unlike the former, instead of being offensive, is considered as a most pleasing perfume. The martin, in short, is the most beautiful of all British beasts of prey; its head is small, and elegantly formed; its eyes lively; its ears are broad, rounded, and open; its back, its sides, and tail, are covered with a fine thick downy fur, with longer hair intermixed; the roots are ash colour, the middle of a bright chesnut, the points black; the head is brown, with a slight cast of red; the legs, and upper sides of the feet, are of a chocolate colour; the palms, or under sides, are covered with a thick down, like that of the body; the feet are broad, the claws white, large, and sharp, well adapted for the purposes of climbing, but, as in others of the weasel kind, incapable of being sheathed or unsheathed at pleasure; the throat and breast are white; the belly of the same colour with the back, but rather paler; the hair on the tail is very long, especially at the end, where it appears much thicker than near the insertion.

There is also a variety of this animal, called the *yellow-breasted martin*, which, in no respect, differs from the former, except that this has a yellow breast, whereas the other has

* Buffon.

a white one: the colour of the body also is darker; and, as it lives more among trees than the other martin, its fur is more valuable, beautiful, and glossy. The former of these Mr. Buffon calls the *fouine;* the latter, simply the *martin;* and he supposes them to be a distinct species: but as they differ only in colour, it is unnecessary to embarrass history by a new distinction, where there is only so minute a difference.

Of all animals of the weasel kind, the martin is the most pleasing; all its motions shew great grace, as well as agility; and there is scarcely an animal in our woods that will venture to oppose it. Quadrupeds five times as big are easily vanquished; the hare, the sheep, and even the wild cat itself, though much stronger, is not a match for the martin: and although carnivorous animals are not fond of engaging each other, yet the wild cat and the martin seldom meet without a combat. Gesner tells us of one of this kind that he kept tame, which was extremely playful and pretty; it went among the houses of the neighbourhood, and always returned home when hungry: it was extremely fond of a dog that had been bred up with it, and used to play with it as cats are seen to play, lying on its back, and biting without anger or injury. That which was kept tame by Mr. Buffon, was not quite so social: it was divested of its ferocity, but continued without attachment; and was still so wild as to be obliged to be held by a chain. Whenever a cat appeared, it prepared for war; and if any of the poultry came within its reach, it flew upon them with avidity. Though it was tied by the middle of the body, it frequently escaped: at first it returned after some hours, but without seeming pleased, and as if it only came to be fed; the next time it continued abroad longer; and, at last, went away without ever returning. It was a female, and was, when it went off, a year and a half old; and Mr. Buffon supposes it to have gone in quest of the male. It ate every thing that was given it, except salad or herbs; and it was remarkably fond of honey. It was remarked, that it drank often, and often slept for two days together; and that, in like manner, it was often two or three days without sleeping. Before it went to sleep, it drew itself up into a round, hid its head, and covered it with its tail. When awake it was in continual agitation, and was obliged

to be tied up, not less to prevent its attacking the poultry, than to hinder it from breaking whatever it came near, by the capricious wildness of its motions.

The yellow-breasted martin is much more common in France than in England; and yet even there this variety is much scarcer than that with the white breast. The latter keeps nearer houses and villages, to make its petty ravages among the sheep and the poultry; the other keeps in the woods, and leads in every respect a savage life, building its nest on the tops of trees, and living upon such animals as are entirely wild like itself. About night-fall it usually quits its solitude to seek its prey, hunts after squirrels, rats, and rabbits; destroys great numbers of birds and their young, takes the eggs from the nest, and often removes them to its own without breaking.* The instant the martin finds itself pursued by dogs, for which purpose there is a peculiar breed, that seem fit for this chase only, it immediately makes to its retreat, which is generally in the hollow of some tree, towards the top, and which it is impossible to come at without cutting it down. Their nest is generally the original tenement of the squirrel, which that little animal bestowed great pains in completing; but the martin having killed and dispossessed the little architect, takes possession of it for its own use, enlarges its dimensions, improves the softness of the bed, and in that retreat brings forth its young. Its litter is never above three or four at a time; they are brought forth with the eyes closed, as in all the rest of this kind, and very soon come to a state of perfection. The dam compensates for her own deficiency of milk, by bringing them eggs and live birds, accustoming them from the beginning to a life of carnage and rapine. When she leads them from the nest into the woods, the birds at once distinguish their enemies, and attend them, as we before observed of the fox, with all the marks of alarm and animosity. Wherever the martin conducts her young, a flock of small birds are seen threatening and insulting her, alarming every thicket, and often directing the hunter in his pursuit. The martin is more common in North America than in any part of Europe. These animals are found in all the northern parts of the world, from Siberia to China and Canada. In every country they are hunted

* Brookes's Natural History.

for their furs, which are very valuable, and chiefly so when taken in the beginning of winter. The most esteemed part of the martin's skin is that part of it which is browner than the rest, and stretches along the back-bone. Above twelve thousand of these skins are annually imported into England from Hudson's Bay, and above thirty thousand from Canada.

THE SABLE.

Most of the classes of the weasel kind would have continued utterly unknown and disregarded, were it not for their furs, which are finer, more glossy, and soft, than those of any other quadruped. Their dispositions are fierce and untameable; their scent generally offensive; and their figure disproportioned and unpleasing. The knowledge of one or two of them would, therefore, have sufficed curiosity; and the rest would probably have been confounded together under one common name, as things useless and uninteresting, had not their skins been coveted by the vain, and considered as capable of adding to human magnificence or beauty.

Of all these, however, the skin of the sable is the most coveted, and held in the highest esteem. It is of a brownish black; and the darker it is it becomes the more valuable. A single skin, though not above four inches broad, is often valued at ten or fifteen pounds;* the fur differing from others in this, that it has no grain; so that rub it which way you will, it is equally smooth and unresisting. Nevertheless, though this little animal's robe was so much coveted by the great, its history till of late was but very little known; and we are obliged to Mr. Jonelin for the first accurate description of its form and nature.† From him we learn that the sable resembles the martin in form and size, and the weasel in the number of its teeth; for it is to be observed, that whereas the martin has thirty-eight teeth, the weasel has but thirty-four; in this respect, therefore, the sable seems to make the shade between these two animals; being shaped like the one, and furnished with teeth like the other. It is also furnished with very large whiskers about the mouth; its feet are broad, and, as in the rest of

* Regnard. † Buffon, vol. xxvii. p. 113.

its kind, furnished with five claws on each foot. These are its constant marks; but its fur, for which it is so much valued, is not always the same. Some of this species are of a dark brown over all the body, except the ears and the throat, where the hair is rather yellow; others are more of a yellowish tincture, their ears and throat being also much paler. These in both are the colours they have in winter, and which they are seen to change in the beginning of the spring; the former becoming of a yellow brown, and the latter of a pale yellow. In other respects they resemble their kind, in vivacity, agility, and inquietude; in sleeping by day, and seeking their prey by night; in living upon smaller animals; and in the disagreeable odour that chiefly characterizes their race.

They generally inhabit along the banks of rivers, in shady places, and in the thickest woods. They leap with great ease from tree to tree, and are said to be afraid of the sun, which tarnishes the lustre of their robes. They are chiefly hunted in winter for their skins, during which part of the year they are only in season. They are mostly found in Siberia, and but very few in any other country of the world; and this scarcity it is which enhances their value. The hunting of the sable chiefly falls to the lot of the condemned criminals, who are sent from Russia into these wild and extensive forests, that, for the greatest part of the year, are covered with snow; and in this instance, as in many others, the luxuries and ornaments of the vain, are wrought out of the dangers and the miseries of the wretched. These are obliged to furnish a certain number of skins every year, and are punished if the proper quantity be not provided.

The sable is also killed by the Russian soldiers, who are sent into those parts to that end. They are taxed a certain number of skins yearly, like the former, and are obliged to shoot with only a single ball, to avoid spoiling the skin, or else with cross-bows and blunt arrows. As an encouragement to the hunters, they are allowed to share among themselves the surplus of those skins which they thus procure; and this, in the process of six or seven years, amounts to a very considerable sum. A colonel, during his seven years stay, gains about four thousand crowns for his share, and the common men six or seven hundred each for theirs.

THE ICHNEUMON.

The ichneumon, which some have injudiciously denominated the *cat of Pharaoh*, is one of the boldest and most useful animals of all the weasel kind. In the kingdom of Egypt, where it is chiefly bred, it is used for the same purposes that cats are in Europe, and is even more serviceable, as being more expert in catching mice than they. This animal is usually of the size of the martin, and greatly resembles it in appearance, except that the hair, which is of a grisly black, is much rougher, and less downy. The tail, also, is not so bushy at the end; and each hair in particular has three or four colours, which are seen in different dispositions of its body. Under its rougher hairs, there is a softer fur of a brownish colour, the rough hair being about two inches long, but that of the muzzle extremely short, as likewise that on the legs and paws. However, being long since brought into a domestic state, there are many varieties in this animal; some being much larger than the martin, others much less; some being of a lighter mixture of colours, and some being streaked in the manner of a cat.

The ichneumon, with all the strength of a cat, has more instinct and agility; a more universal appetite for carnage, and a greater variety of powers to procure it.* Rats, mice, birds, serpents, lizards, and insects, are all equally pursued; it attacks every living thing which it is able to overcome, and indiscriminately preys on flesh of all kinds. Its courage is equal to the vehemence of its appetite. It fears neither the force of the dog, nor the insidious malice of the cat; neither the claws of the vulture, nor the poison of the viper. It makes war upon all kinds of serpents with great avidity, seizes and kills them, how venomous soever they be; and we are told, that when it begins to perceive the effects of their rage, it has recourse to a certain root, which the Indians call after its name, and assert to be an antidote for the bite of the asp or the viper.

But what this animal is particularly serviceable to the Egyptians for, is, that it discovers and destroys the eggs of the crocodile. It also kills the young ones that have not as yet been able to reach the water; and, as fable usually

* The rest of this description is extracted from Mr. Buffon, except where marked with commas.

goes hand in hand with truth, it is said that the ichneumon sometimes enters the mouth of the crocodile, when it is found sleeping on the shore, boldly attacks the enemy in the inside, and at length, when it has effectually destroyed it, eats its way out again.

The ichneumon, when wild, generally resides along the banks of rivers; and in times of inundation makes to the higher ground, often approaching inhabited places in quest of prey. It goes forward silently and cautiously, changing its manner of moving according to its necessities. Sometimes it carries the head high, shortens its body, and raises itself upon its legs; sometimes it lengthens itself, and seems to creep along the ground; it is often observed to sit upon its hind legs like a dog when taught to beg; but more commonly it is seen to dart like an arrow upon its prey, and seize it with inevitable certainty. Its eyes are sprightly, and full of fire, its physiognomy sensible, its body nimble, its tail long, and its hair rough and various. Like all of its kind, it has glands, that open behind, and furnish an odorous substance. Its nose is too sharp and its mouth too small to permit its seizing things that are large; however, it makes up by its courage and activity its want of arms; it easily strangles a cat, though stronger and larger than itself; and often fights with dogs, which, though never so bold, learn to dread the ichneumon as a formidable enemy. It also takes the water like the otter, and, as we are told, will continue under it much longer.

This animal grows fast, and dies soon. It is found in great numbers in all the southern parts of Asia, from Egypt to Java; and it is also found in Africa, particularly at the Cape of Good Hope. It is domestic, as was said, in Egypt, but in our colder climates it is not easy to breed or maintain them, as they are not able to support the rigour of our winters. Nevertheless, they take every precaution that instinct can dictate to keep themselves warm; they wrap themselves up into a ball, hiding the head between the legs, and in this manner continue to sleep all day long. "Seba had one sent him from the island of Ceylon, which he permitted to run for some months about the house. It was heavy and slothful by day, and often could not be awakened even with a blow; but it made up this indolence by its nocturnal activity, smelling about without either

being wholly tame or wholly mischievous. It climbed up the walls and the trees with very great ease, and appeared extremely fond of spiders and worms, which it preferred, probably from their resemblance to serpents, its most natural food. It was also particularly eager to scratch up holes in the ground; and this, added to its wildness and uncleanliness, obliged our naturalist to smother it in spirits, in order to preserve, and add it to the rest of his collection."

This animal was one of those formerly worshipped by the Egyptians, who considered every thing that was serviceable to them as an emanation of the Deity, and worshipped such as the best representatives of God below. Indeed, if we consider the number of eggs which the crocodile lays in the sand at a time, which often amount to three or four hundred, we have reason to admire this little animal's usefulness as well as industry in destroying them, since otherwise the crocodile might be produced in sufficient numbers to overrun the whole earth.

THE STINKARDS.

This is a name which our sailors give to one or two animals of the weasel kind, which are chiefly found in America. All the weasel kind, as was already observed, have a very strong smell; some of them indeed approaching to a perfume, but the greatest number most insupportably fœtid. But the smell of our weasels, and ermines, and polecats, is fragrance itself when compared to that of the *squash* and the *skink*, which have been called the *polecats* of America. These two are found in different parts of America, both differing in colour and fur, but both obviously of the weasel kind, as appears not only from their figure and odour, but also from their disposition. The squash is about the size of a polecat, its hair of a deep brown, but principally differing from all of this kind in having only four toes on the feet before, whereas all the other weasels have five. The skink, which I take to be Catesby's Virginia polecat, resembles a polecat in shape and size, but particularly differs in the length of its hair and colour. The hair is above three inches and a half long, and that at the end of the tail above four inches. The colour is partly black and partly white, variously

disposed over the body, very glossy, long, and beautiful. There seem to be two varieties more of this animal, which Mr. Buffon calls the *conepate* and the *zorille*. He supposes each to be a distinct species: but as they are both said to resemble the polecat in form, and both to be clothed with a long fur of a black and white colour, it seems needless to make a distinction. The conepate resembles the skink in all things except in size, being smaller, and in the disposition of its colours, which are more exact, having five white stripes upon a black ground, running longitudinally from the head to the tail. The zorille resembles the skink, but is rather smaller, and more beautifully coloured, its streaks of black and white being more distinct, and the colours of its tail being black at its insertion and white at the extremity; whereas in the skink they are all of one gray colour.

But whatever differences there may be in the figure or colour of these little animals, they all agree in one common affection, that of being intolerably fœtid and loathsome. I have already observed that all the weasel kind have glands furnishing an odorous matter, near the anus, the conduits of which generally have their aperture just at its opening. That substance which is stored up in these receptacles, is in some of this kind, such as in the martin already mentioned, and also in the genet and the civet to be described hereafter, a most grateful perfume; but in the weasel, the ermine, the ferret, and the polecat, it is extremely fœtid and offensive. These glands in the animals now under consideration are much larger, and furnish a matter sublimed to a degree of putrescence that is truly amazing. As to the perfumes of musk and civet, we know that a single grain will diffuse itself over a whole house, and continue for months to spread an agreeable odour, without diminution. However, the perfume of the musk or the civet is nothing, either for strength or duration, to the insupportable odour of these. It is usually voided with their excrement; and if but a single drop happens to touch any part of a man's garment, it is more than probable that he can never wear any part of it more.

In describing the effects produced by the excrement of these animals, we often hear of its raising this diabolical smell by its urine. However, of this I am apt to doubt;

and it should seem to me, that, as the weasel kind have their excrements so extremely fœtid from the cause above-mentioned, we may consider these also as being fœtid from the same causes. Besides, they are not furnished with glands to give their urine such a smell; and the analogy between them and the weasel kind being so strong in other respects, we may suppose they resemble each other in this. It has also been said, that they take this method of ejecting their excrement to defend themselves against their pursuers; but it is much more probable that this ejection is the convulsive effect of terror, and that it serves as their defence without their own concurrence. Certain it is, that they never smell thus horridly except when enraged or affrighted, for they are often kept tame about the houses of the planters of America without being very offensive.

The habitudes of all these animals are the same, living like all the rest of the weasel kind, as they prey upon smaller birds and birds' eggs. The squash, for instance, burrows like the pole-cat in the clefts of rocks, where it brings forth its young. It often steals into farm-yards, and kills the poultry, eating only their brains. Nor is it safe to pursue or offend it, for then it calls up all its scents, which are its most powerful protection. At that time neither men nor dogs will offer to approach it; the scent is so strong that it reaches for half a mile round, and more near at hand is almost stifling. If the dogs continue to pursue, it does all in its power to escape, by getting up a tree, or by some such means; but if driven to an extremity, it then lets fly upon the hunters; and if it should happen that a drop of this fœtid discharge falls in the eye, the person runs the risk of being blinded for ever.*

The dogs themselves instantly abate of their ardour when they find this extraordinary battery played off against them; they instantly turn tail, and leave the animal undisputed master of the field; and no exhortations can ever bring them to rally. "In the year 1749," says Kalm, "one of these animals came near the farm where I lived. It was in winter time, during the night; and the dogs that were upon the watch pursued it for some time, until

* Voyage de Kalm, as quoted by Buffon, vol. xxvii. p. 93.

it discharged against them. Although I was in my bed a good way off, I thought I should have been suffocated; and the cows and oxen, by their lowings, shewed how much they were affected by the stench. About the end of the same year, another of these animals crept into our cellar, but did not exhale the smallest scent, because it was not disturbed. A foolish woman, however, who perceived it at night, by the shining of its eyes, killed it, and at that moment its stench began to spread. The whole cellar was filled with it to such a degree, that the woman kept her bed for several days after; and all the bread, meat, and other provisions, that were kept there, were so infected that they were obliged to be thrown out of doors." Nevertheless, many of the planters and native Americans keep this animal tame about their houses; and seldom perceive any disagreeable scents, except it is injured or frighted. They are also known to eat its flesh, which some assert to be tolerable food; however, they take care to deprive it of those glands which are so horridly offensive.

THE GENET.

From the squash, which is the most offensive animal in nature, we come to the genet, which is one of the most beautiful and pleasing. Instead of the horrid stench with which the former affects us, this has a most grateful odour: more faint than civet, but to some, for that reason, more agreeable. This animal is rather less than the martin; though there are genets of different sizes, and I have seen one rather larger. It also differs somewhat in the form of its body. It is not easy in words to give an idea of the distinction. It resembles all those of the weasel kind, in its length, compared to its height; it resembles them in having a soft beautiful fur, in having its feet armed with claws that cannot be sheathed, and in its appetite for petty carnage. But then it differs from them in having the nose much smaller and longer, rather resembling that of a fox than a weasel. The tail, also, instead of being bushy, tapers to a point, and is much longer; its ears are larger, and its paws smaller. As to its colours and figure in general, the genet is spotted with black, upon a ground

mixed with red and gray. It has two sorts of hair, the one shorter and softer, the other longer and stronger, but not above half an inch long on any part of its body except the tail. Its spots are distinct and separate upon the sides, but unite towards the back, and form black stripes, which run longitudinally from the neck backwards. It has also along the back a kind of mane or longish hair, which forms a black streak from the head to the tail, which last is marked with rings, alternately black and white, its whole length.

The genet, like all the rest of the weasel kinds, has glands, that separate a kind of perfume, resembling civet, but which soon flies off. These glands open differently from those of other animals of this kind; for, as the latter have their apertures just at the opening of the anus, these have their aperture immediately under it; so that the male seems, for this reason, to the superficial observer, to be of two sexes.

It resembles the martin very much in its habits and disposition;* except, that it seems tamed much more easily. Belonius assures us, that he has seen them in the houses at Constantinople as tame as cats; and that they were permitted to run every where about, without doing the least mischief. For this reason they have been called the *cats of Constantinople*, although they have little else in common with that animal, except their skill in spying out and destroying vermin. Naturalists pretend that it inhabits only the moister grounds, and chiefly resides along the banks of rivers, having never been found in mountains, nor dry places. The species is not much diffused; it is not to be found in any part of Europe, except Spain and Turkey; it requires a warm climate to subsist and multiply in; and yet it is not to be found in the warmer regions either of India or Africa. From such as have seen its uses at Constantinople, I learn, that it is one of the most beautiful, cleanly, and industrious animals in the world; that it keeps whatever house it is in perfectly free from mice and rats, which cannot endure its smell. Add to this, its nature is mild and gentle, its colours various and glossy, its fur valuable; and, upon the whole, it seems to be one of those

* Buffon, vol. xix. p. 187.

animals that, with proper care, might be propagated amongst us, and might become one of the most serviceable of our domestics.

THE CIVET.

Proceeding from the smaller to the greater of this kind, we come in the last place to the Civet, which is much larger than any of the former; for as the martin is not above sixteen inches long, the civet is found to be above thirty. Mr. Buffon distinguishes this species into two kinds; one of which he calls the *civet*, and the other the *zibet*. The latter principally differs from the former in having the body longer and more slender, the nose smaller, the ears longer and broader; no mane or long hair running down the back in the latter; and the tail longer, and better marked with rings of different colours, from one end to the other. These are the differences which have induced this great naturalist to suppose them animals of distinct species; and to allot each a separate description. How far future experience may confirm this conjecture, time must discover; but certain it is, that if such small varieties make a separate species, there may be many other animals equally entitled to peculiar distinction that are now classed together. We shall, therefore, content ourselves, at present, with considering, as former naturalists have done, these two merely as varieties of the same animal, and only altered in figure by climate, food, or education.

The civet resembles animals of the weasel kind in the long slenderness of its body, the shortness of its legs, the odorous matter that exudes from the glands behind, the softness of its fur, the number of its claws, and their incapacity of being sheathed. It differs from them in being much larger than any hitherto described; in having the nose lengthened, so as to resemble that of the fox; the tail long, and tapering to a point; and its ears straight, like those of a cat. The colour of the civet varies: it is commonly ash, spotted with black; though it is whiter in the female, tending to yellow; and the spots are much larger, like those of a panther. The colour on the belly, and under the throat, is black; whereas the other parts of the body are black or streaked with gray. This animal varies in its colour, being

sometimes streaked, as in our kind of cats called *tabbies*. It has whiskers like the rest of its kind; and its eye is black and beautiful.

The opening of the pouch or bag, which is the receptacle of the civet, differs from that of the rest of the weasel kind, not opening into, but under the anus. Besides this opening, which is large, there is still another lower down; but for what purposes designed, is not known. The pouch itself is about two inches and a half broad, and two long; its opening makes a chink, from the top downwards, that is about two inches and a half long; and is covered, on the edges and within, with short hair: when the two sides are drawn asunder, the inward cavity may be seen, large enough to hold a small pullet's egg; all round this are small glands, opening and furnishing that strong perfume which is so well known, and is found in this pouch of the colour and consistence of pomatum. Those who make it their business to breed these animals for their perfume usually take it from them twice or thrice a week, and sometimes oftener. The animal is kept in a long sort of a box, in which it cannot turn round. The person, therefore, opens this box behind, drags the animal backwards by the tail, keeps it in this position by a bar before, and, with a wooden spoon, takes the civet from the pouch, as carefully as he can; then lets the tail go, and shuts the box again. The perfume, thus procured, is put into a vessel, which he takes care to keep shut; and when a sufficient quantity is procured, it is sold to very great advantage.

The civet,* although a native of the warmest climates, is yet found to live in temperate, and even cold countries, provided it be defended carefully from the injuries of the air. Wherefore, it is not only bred among the Turks, the Indians, and Africans, but great numbers of these animals are also bred in Holland, where this scraping people make no small gain of its perfume. The perfume of Amsterdam is reckoned the purest of any; the people of other countries adulterating it with gums, and other matters, which diminish its value, but increase its weight. The quantity which a single animal affords, generally depends upon its health and nourishment. It gives more in proportion as it

* Buffon, vol. xix.

is more delicately and abundantly fed. Raw flesh, hashed small, eggs, rice, birds, young fowls, and particularly fish, are the kinds of food the civet most delights in. These are to be changed and altered, to suit and entice its appetite, and continue its health. It gets but very little water; and although it drinks but rarely, yet it makes urine very frequently; and, upon such occasions, we cannot, as in other animals, distinguish the male from the female.

The perfume of the civet is so strong that it communicates itself to all parts of the animal's body; the fur is impregnated thereby, and the skin penetrated to such a degree that it continues to preserve the odour for a long time after it is stript off. If a person be shut up with one of them in a close room, he cannot support the perfume, which is so copiously diffused. When the animal is irritated, as in all the weasel kind, its scent is much more violent than ordinary; and if it be tormented so as to make it sweat, this also is a strong perfume, and serves to adulterate or increase what is otherwise obtained from it. In general, it is sold in Holland for about fifty shillings an ounce; although, like all other commodities, its value alters in proportion to the demand. Civet must be chosen new, of a good consistence, a whitish colour, and a strong disagreeable smell. There is still a very considerable traffic carried on from Bussorah, Calicut, and other places in India, where the animal that produces it is bred; from the Levant also, from Guinea, and especially from Brasil in South America, although Mr. Buffon is of opinion that the animal is a native only of the Old Continent, and not to be found wild in the New. The best civet, however, is furnished, as was observed, by the Dutch, though not in such quantities at present as some years past, when this perfume was more in fashion. Civet is a much more grateful perfume than musk, to which it has some resemblance; and was some years ago used for the same purposes in medicine. But, at present, it is quite discontinued in prescription; and persons of taste or elegance seem to proscribe it even from the toilet. Perfumes, like dress, have their vicissitudes; musk was in peculiar repute, until displaced by civet; both gave ground, upon discovering the manner of preparing ambergrise; and even this is now disused for the less powerful vegetable kinds of fragrance, spirit of lavender or ottar of roses.

As to the rest, the civet is said to be a wild fierce animal; and, although sometimes tamed, is never thoroughly familiar. Its teeth are strong and cutting, although its claws be feeble and flexible. It is light and active, and lives by prey, as the rest of its kind, pursuing birds, and other small animals that it is able to overcome. They are sometimes seen stealing into the yards and outhouses, to seize upon the poultry: their eyes shine in the night, and it is very probable that they see better in the dark than by day. When they fail of animal food, they are found to subsist upon roots and fruits, and very seldom drink; for which reason they are never found near great waters. They breed very fast in their native climates, where the heat seems to conduce to their propagation; but in our temperate latitudes, although they furnish their perfume in great quantities, yet they are not found to multiply. A proof that their perfume has no analogy with their appetite for generation.

THE GLUTTON.*

I WILL add but one animal more to this numerous class of the weasel kind; namely, the glutton; which, for several reasons, seems to belong to this tribe, and this only. We have hitherto had no precise description of this quadruped; some resembling it to a badger, some to a fox, and some to a hyæna. Linnæus places it among the weasels, from the similitude of its teeth; it should seem to me to resemble this animal still more, from the great length of its body, and the shortness of its legs, from the softness of its fur, its disagreeable scent, and its insatiable appetite for animal food. Mr. Klein, who saw one of them, which was brought alive from Siberia, assures us, that it was about three feet long,† and about a foot and a half high.

* This animal is now ascertained to be a species of bear. It is about three feet long, besides the tail, which is a foot in length. Its size is equal to that of the common fox, though, like others of its tribe, it is of a more clumsy make, and its back is more convex. Its general colour is a blackish brown, with the sides paler. The variety called the Wolverene is distinguished by its superior size, in the colour of its body, which is dull ferruginous, with the front, throat, and longitudinal stripe on the body, whitish.

† He says, it was an ell and eight inches long: I have, therefore, given its length, as supposing it to be a Flemish ell, which is 27 inches.

If we compare these dimensions with those of other animals, we shall find that they approach more nearly to the class we are at present describing than any other; and that the glutton may very justly be conceived under the form of a great overgrown weasel. Its nose, its ears, its teeth, and its long bushy tail, are entirely similar; and as to what is said of its being rather corpulent than slender, it is most probable that those who described it thus, saw it after eating, at which time its belly, we are assured, is most monstrously distended: however, suspending all certainty upon this subject, I will take leave rather to follow Linnæus than Buffon, in describing this animal; and leave future experience to judge between them.

The glutton, which is so called from its voracious appetite, is an animal found as well in the north of Europe and Siberia, as in the northern parts of America, where it has the name of the *carcajou*. Amidst the variety of descriptions which have been given of it, no very just idea can be formed of its figure; and, indeed, some naturalists, among whom was Ray, entirely doubted of its existence. From the best accounts, however, we have of it, the body is thick and long, the legs short; it is black along the back, and of a reddish brown on the sides; its fur is held in the highest estimation, for its softness and beautiful gloss; the tail is bushy, like that of the weasel, but rather shorter; and its legs and claws are better fitted for climbing trees, than for running along the ground. Thus far it entirely resembles the weasel; and its manner of taking its prey is also by surprise, and not by pursuit.

Scarcely any of the animals with short legs and long bodies pursue their prey; but, knowing their own incapacity to overtake it by swiftness, either creep upon it in its retreats, or wait in ambush and seize it with a bound. The glutton, from the make of its legs and the length of its body, must be particularly slow; and, consequently, its only resource is in taking its prey by surprise. All the rest of the weasel kind, from the smallness of their size, are better fitted for a life of insidious rapine than this; they can pursue their prey into its retreats, they can lurk unseen among the branches of trees, and hide themselves with ease under the leaves: but the glutton is too large to follow small prey into their retreats; nor would such, even

if obtained, be sufficient to sustain it. For these reasons, therefore, this animal seems naturally compelled to the life for which it has long been remarkable. Its only resource is to climb a tree, which it does with great ease, and there it waits with patience until some large animal passes underneath, upon which it darts down with unerring certainty, and destroys it.

It is chiefly in North America that this voracious creature is seen lurking among the thick branches of trees, in order to surprise the deer, with which the extensive forests of that part of the world abound. Endued with a degree of patience equal to its rapacity, the glutton singles out such trees as it observes marked by the teeth or the antlers of the deer; and is known to remain there watching for several days together. If it has fixed upon a wrong tree, and finds that the deer have either left that part of the country, or cautiously shun the place, it reluctantly descends, pursues the beaver to its retreat, or even ventures into the water in pursuit of fishes. But if it happens that, by long attention and keeping close, at last the elk or the rein-deer happen to pass that way, it at once darts down upon them, sticks its claws between their shoulders, and remains there unalterably firm. It is in vain that the large frighted animal increases its speed, or threatens with its branching horns; the glutton having taken possession of its post, nothing can drive it off; its enormous prey drives rapidly along amongst the thickest woods, rubs itself against the largest trees, and tears down the branches with its expanded horns; but still its insatiable foe sticks behind, eating its neck, and digging its passage to the great blood-vessels that lie in that part. Travellers who wander through those deserts, often see pieces of the glutton's skin sticking to the trees, against which it was rubbed by the deer. But the animal's voracity is greater than its feelings, and it never seizes without bringing down its prey. When, therefore, the deer, wounded and feeble with the loss of blood, falls, the glutton is seen to make up for its former abstinence by its present voracity. As it is not possessed of a feast of this kind every day, it resolves to lay in a store to serve it for a good while to come. It is, indeed, amazing how much one of these animals can eat at a time! That which was seen by Mr. Klein, although without exercise or air,

although taken from its native climate, and enjoying but an indifferent state of health, was yet seen to eat thirteen pounds of flesh every day, and yet remain unsatisfied. We may, therefore, easily conceive how much more it must devour at once, after a long fast, of a food of its own procuring, and in the climate most natural to its constitution. We are told, accordingly, that from being a lank, thin animal, which it naturally is, it then gorges in such quantities, that its belly is distended, and its whole figure seems to alter. Thus voraciously it continues eating, till, incapable of any other animal function, it lies totally torpid by the animal it has killed; and in this situation continues for two or three days. In this loathsome and helpless state, it finds its chief protection from its horrid smell, which few animals care to come near;* so that it continues eating and sleeping till its prey be devoured, bones and all, and then it mounts a tree, in quest of another adventure.

The glutton, like many others of the weasel kind, seems to prefer the most putrid flesh to that newly killed; and such is the voraciousness of this hateful creature, that, if its swiftness and strength were equal to its rapacity, it would soon thin the forest of every other living creature. But, fortunately, it is so slow, that there is scarcely a quadruped that cannot escape it, except the beaver. This, therefore, it very frequently pursues upon land; but the beaver generally makes good its retreat by taking to the water, where the glutton has no chance to succeed. This pursuit only happens in summer; for in the winter all that remains is to attack the beaver's house, as at that time it never stirs from home. This attack, however, seldom succeeds; for the beaver has a covert way bored under the ice, and the glutton has only the trouble and disappointment of sacking an empty town.

A life of necessity generally produces a good fertile invention. The glutton, continually pressed by the call of appetite, and having neither swiftness nor activity to satisfy it, is obliged to make up by stratagem the defects of nature. It is often seen to examine the traps and the snares laid for other animals, in order to anticipate the fowlers. It is said to practise a thousand arts to procure its prey, to steal upon the retreats of the rein-deer, the flesh of which animal it loves in preference to all others; to lie in wait

* Linnæi Systema, p. 67.

for such animals as have been maimed by the hunters; to pursue the isatis while it is hunting for itself; and when that animal has run down its prey, to come in and seize upon the whole, and sometimes to devour even its poor provider; and when these pursuits fail, even to dig up the graves, and fall upon the bodies interred there, devouring them, bones and all. For these reasons, the natives of the countries where the glutton inhabits, hold it in utter detestation, and usually term it the vulture of quadrupeds. And yet it is extraordinary enough, that, being so very obnoxious to man, it does not seem to fear him.* We are told by Gmelin of one of these coming up boldly and calmly where there were several persons at work, without testifying the smallest apprehension, or attempting to run, until it had received several blows, that at last totally disabled it. In all probability it came among them seeking its prey; and, having been used to attack animals of inferior strength, it had no idea of a force superior to its own. The glutton, like all the rest of its kind, is a solitary animal; and is never seen in company except with its female, with which it couples in the midst of winter. The latter goes with young about four months, and brings forth two or three at a time.† They burrow in holes as the weasel; and the male and female are generally found together, both equally resolute in defence of their young. Upon this occasion the boldest dogs are afraid to approach them; they fight obstinately, and bite most cruelly. However, as they are unable to escape by flight, the hunters come to the assistance of the dogs, and easily overpower them. Their flesh, it may readily be supposed, is not fit to be eaten, but the skins amply recompense the hunters for their toil and danger. The fur has the most beautiful lustre that can be imagined, and is preferred before all others, except that of the Siberian fox, or the sable. Among other peculiarities of this animal, Linnæus informs us, that it is very difficult to be skinned; but from what cause, whether its abominable stench, or the skin's tenacity to the flesh, he has not thought fit to inform us.

* Buffon. † Linnæi Systema, p. 67.

BOOK V.

*ANIMALS OF THE HARE KIND.**

INTRODUCTION.

HAVING described in the last chapter a tribe of minute, fierce, rapacious animals, I come now to a race of minute animals of a more harmless and gentle kind, that, without being enemies to any, are preyed upon by all. As Nature has fitted the former for hostility, so it has entirely formed the latter for evasion; and as the one kind subsist by their courage and activity, so the other find safety from their swiftness and their fears. The hare is the swiftest animal in the world for the time it continues; and few quadrupeds can overtake even the rabbit, when it has but a short way to run. To this class also we may add the squirrel, somewhat resembling the hare and rabbit in its form and nature, and equally pretty, inoffensive, and pleasing.

If we were methodically to distinguish animals of the hare kind from all others, we might say that they have but two cutting teeth above and two below, that they are covered with a soft downy fur, and that they have a bushy tail. The combination of these marks might perhaps distinguish them tolerably well, whether from the rat, the beaver, the otter, or any other most nearly approaching in form. But, as I have declined all method that rather tends to embarrass history than enlighten it, I am contented to class these animals together for no very precise reason, but because I find a general resemblance between them in their natural habits, and in the shape of their heads and body. I call a squirrel an animal of the hare kind, because it is something like a hare. I call the paca of the same kind, merely because it is more like a rabbit than any other animal I know of. In short, it is fit to erect some particular

* The animals of this family have two front teeth in each jaw; those in the upper jaw are doubled, having two smaller ones standing behind the others: they feed entirely on vegetables, are very small, and run by a kind of leaping: they have five toes on the fore-feet, and four on the hinder.



T. Dixon. sc

1. THE HARE. 2. THE RABBIT. 3. THE SQUIRREL. 4. THE PACA.
5. THE GUINEA-PIG. 6. THE MARMOT.

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standard in the imagination of the reader, to refer him to some animal that he knows, in order to direct him in conceiving the figure of such as he does not know. Still, however, he should be apprised that his knowledge will be defective without an examination of each particular species; and that saying an animal is of this or that particular kind, is but a very trifling part of its history.

Animals of the hare kind, like all others that feed entirely upon vegetables, are inoffensive and timorous. As Nature furnishes them with a most abundant supply, they have not that rapacity after food remarkable in such as are often stinted in their provision. They are extremely active and amazingly swift, to which they chiefly owe their protection; for being the prey of every voracious animal, they are incessantly pursued. The hare, the rabbit, and the squirrel, are placed by Pyerius, in his Treatise of Ruminating Animals, among the number of those that chew the cud; but how far this may be true I will not pretend to determine. Certain it is that their lips continually move whether sleeping or waking. Nevertheless they chew their meat very much before they swallow it, and for that reason I should suppose that it does not want a second mastication. All these animals use their fore-paws like hands; they are remarkably salacious, and are furnished by Nature with more ample powers than most others for the business of propagation. They are so very prolific, that were they not thinned by the constant depredations made upon them by most other animals, they would quickly over-run the earth.

THE HARE.

Of all these the hare is the largest, the most persecuted, and the most timorous; all its muscles are formed for swiftness; and all its senses seem only given to direct its flight. It has very large prominent eyes, placed backwards in its head, so that it can almost see behind it as it runs. These are never wholly closed; but as the animal is continually upon the watch, it sleeps with them open. The ears are still more remarkable for their size; they are moveable, and capable of being directed to every quarter; so that the smallest sounds are readily received, and the animal's

motions directed accordingly. The muscles of the body are very strong, and without fat, so that it may be said to carry no superfluous burden of flesh about it; the hinder feet are longer than the fore, which still adds to the rapidity of its motions; and almost all animals that are remarkable for their speed, except the horse, are formed in the same manner.

An animal so well formed for a life of escape, might be supposed to enjoy a state of tolerable security; but as every rapacious creature is its enemy, it but very seldom lives out its natural term. Dogs of all kinds pursue it by instinct, and follow the hare more eagerly than any other animal. The cat and the weasel kinds are continually lying in ambush, and practising all their little arts to seize it; birds of prey are still more dangerous enemies, as against them no swiftness can avail, nor retreat secure; but man, an enemy far more powerful than all, prefers its flesh to that of other animals, and destroys greater numbers than all the rest. Thus pursued and persecuted on every side, the race would long since have been totally extirpated, did it not find a resource in its amazing fertility.

The hare multiplies exceedingly; it is in a state of engendering at a few months old; the female goes with young but thirty days, and generally brings forth three or four at a time.* As soon as they have produced their young, they are again ready for conception, and thus do not lose any time in continuing the breed. But they are in another respect fitted in an extraordinary manner for multiplying their kind; for the female, from the conformation of her womb, is often seen to bring forth, and yet to continue pregnant at the same time; or, in other words, to have young ones of different ages in her womb together. Other animals never receive the male when pregnant, but bring forth their young at once. But it is frequently different with the hare; the female often, though already impregnated, admitting the male, and thus receiving a second impregnation. The reason of this extraordinary circumstance is, that the womb in these animals is divided in such a manner that it may be considered as a double organ, one side of which may be filled while the other remains empty. Thus these animals may be seen to couple at

* Buffon, vol. xiii. p. 12.

every period of their pregnancy, and even while they are bringing forth young, laying the foundation of another brood.

The young of these animals are brought forth with their eyes open, and the dam suckles them for twenty days, after which they leave her, and seek out for themselves.* From this we observe, that the education these animals receive is but trifling, and the family connection but of a short duration. In the rapacious kinds the dam leads her young forth for months together; teaches them the arts of rapine; and, although she wants milk to supply them, yet keeps them under her care until they are able to hunt for themselves. But a long connection of this kind would be very unnecessary as well as dangerous to the timid animals we are describing; their food is easily procured; and their associations, instead of protection, would only expose them to their pursuers. They seldom, however, separate far from each other, or from the place where they were produced; but make each a form at some distance, having a predilection rather for the place than each other's society. They feed during the night rather than by day, choosing the more tender blades of grass, and quenching their thirst with the dew. They live also upon roots, leaves, fruits, and corn, and prefer such plants as are furnished with a milky juice. They also strip the bark of trees during the winter, there being scarcely any that they will not feed on, except the lime or the alder. They are particularly fond of birch, pinks, and parsley. When they are kept tame, they are fed with lettuce and other garden herbs; but the flesh of such as are thus brought up is always indifferent.

They sleep or repose in their forms by day, and may be said to live only by night.† It is then that they go forth to feed and couple. They do not pair, however, but in the rutting season, which begins in February; the male pursues and discovers the female by the sagacity of its nose. They are then seen by moonlight, playing, skipping, and pursuing each other; but the least motion, the slightest breeze, the falling of a leaf, is sufficient to disturb their revels; they instantly fly off, and each takes a separate way.

* Buffon, vol. xiii. p. 12. † Ibid.

As their limbs are made for running, they easily outstrip all other animals in the beginning; and could they preserve their speed, it would be impossible to overtake them; but as they exhaust their strength at their first efforts, and double back to the place they were started from, they are more easily taken than the fox, which is a much slower animal than they. As their hind legs are longer than the fore, they always choose to run up hill, by which the speed of their pursuers is diminished, while theirs remains the same. Their motions are also without any noise, as they have the sole of the foot furnished with hair; and they seem the only animals that have hair on the inside of their mouths.

They seldom live above seven or eight years at the utmost: they come to their full perfection in a year; and this multiplied by seven, as in other animals, gives the extent of their lives.* It is said, however, that the females live longer than the males: of this Mr. Buffon makes a doubt; but I am assured that it is so. They pass their lives, in our climate, in solitude and silence; and they seldom are heard to cry, except when they are seized or wounded. Their voice is not so sharp as the note of some other animals, but more nearly approaching that of the squalling of a child. They are not so wild as their dispositions and their habits seem to indicate; but are of a complying nature, and easily susceptible of a kind of education. They are easily tamed. They even become fond and caressing, but they are incapable of attachment to any particular person, and never can be depended upon; for, though taken never so young, they regain their native freedom at the first opportunity. As they have a remarkably good ear, and sit upon their hind legs, and use their fore-paws as hands, they have been taught to beat the drum, to dance to music, and go through the manual exercise.

But their natural instincts for their preservation are much more extraordinary than those artificial tricks that are taught them. They make themselves a form, particularly in those places where the colour of the grass most resembles that of their skin; it is open to the south in winter, and to the north in summer. The hare, when it hears the hounds at a distance, flies for some time through a natural impulse,

* Buffon, vol. xiii. p. 12.

without managing its strength, or consulting any other means but speed for its safety. Having attained some hill or rising ground, and left the dogs so far behind that it no longer hears their cries, it stops, rears on its hinder legs and at length looks back to see if it has not lost its pursuers. But these, having once fallen upon the scent, pursue slowly and with united skill, and the poor animal soon again hears the fatal tidings of their approach. Sometimes when sore hunted it will start a fresh hare, and squat in the same form; sometimes it will creep under the door of a sheep-cot, and hide among the sheep; sometimes it will run among them, and no vigilance can drive it from the flock; some will enter holes like the rabbit, which the hunters call going to *vault;* some will go up one side of the hedge and come down the other; and it has been known that a hare sorely hunted has got upon the top of a quick-set hedge, and run a good way thereon, by which it has effectually evaded the hounds. It is no unusual thing also for them to betake themselves to furze bushes, and to leap from one to another, by which the dogs are frequently misled. However, the first doubling a hare makes is generally a key to all its future attempts of that kind, the latter being exactly like the former. The young hares tread heavier, and leave a stronger scent than the old, because their limbs are weaker; and the more this forlorn creature tires, the heavier it treads, and the stronger is the scent it leaves. A buck, or male hare, is known by its choosing to run upon hard highways, feeding farther from the wood-sides, and making its doubling of a greater compass than the female. The male having made a turn or two about its form, frequently leads the hounds five or six miles on a stretch; but the female keeps close by some covert side, turns, crosses, and winds among the bushes like a rabbit, and seldom runs directly forward. In general, however, both male and female regulate their conduct according to the weather. In a moist day they hold by the highways more than at any other time, because the scent is then strongest upon the grass. If they come to the side of a grove or spring, they forbear to enter, but squat down by the side thereof until the hounds have overshot them; and then, turning along their former path, make to their old form, from which they vainly hope for protection.

Hares are divided, by the hunters, into mountain and measled hares. The former are more swift, vigorous, and have the flesh better tasted; the latter chiefly frequent the marshes, when hunted keep among low grounds, and their flesh is moist, white, and flabby. When the male and female keep one particular spot, they will not suffer any strange hare to make its form in the same quarter; so that it is usually said, that the more you hunt, the more hares you shall have; for, having killed one hare, others come and take possession of its form. Many of these animals are found to live in woods and thickets, but they are naturally fonder of the open country, and are constrained only by fear to take shelter in places that afford them neither a warm sun nor an agreeable pasture. They are, therefore, usually seen stealing out of the hedges of the wood to taste the grass that grows shorter and sweeter in the open fields than under the shade of the trees; however, they seldom miss of being pursued; and every excursion is a new adventure. They are shot at by poachers; traced by their footsteps in the snow; caught in springs; dogs, birds, and cats, are all combined against them; ants, snakes, and adders, drive them from their forms, especially in summer; even fleas, from which most other animals are free, persecute this poor creature; and so various are its enemies, that it is seldom permitted to reach even that short term to which it is limited by nature.

The soil and climate have their influence upon this animal, as well as on most others. In the countries bordering on the north pole, they become white in winter, and are often seen in great troops of four or five hundred, running along the banks of the river Irtish, or the Jenisca, and are as white as the snow they tread on. They are caught in traps for the sake of their skins, which, on the spot, are sold for less than seven shillings a hundred. Their fur is well known to form a considerable article in the hat manufacture; and we accordingly import vast quantities of it from those countries where the hare abounds in such plenty. They are found also entirely black, but these in much less quantities than the former;* and even some have been seen with horns, though these but rarely.†

* Klein. Disp. Quadrup. p. 52. † Johnston de Quadrup. l. ii. C. 2.

The hares of the hot countries, particularly in Italy, Spain, and Barbary, are smaller than ours: those bred in the Milanese country are said to be the best in Europe.* There is scarcely a country where this animal is not to be found, from the torrid zone to the neighbourhood of the polar circle. The natives of Guinea knock them on the head as they come down to the sides of the rivers to drink. They also surround the place where they are seen in numbers, and clattering a short stick, which every man carries, against that which the person next him carries, they diminish their circle gradually, till the hares are cooped up in the midst. They then altogether throw their sticks in among them, and with such deadly force, that they seldom fail of killing great numbers at a time.†

The flesh of this animal has been esteemed a delicacy among some nations, and it is held in detestation by others. The Jews, the ancient Britons, and the Mahometans, all considered it as an unclean animal, and religiously abstained from it. On the contrary, there are scarce any other people, however barbarous at present, that do not consider it as the most agreeable food. Fashion seems to preside and govern all the senses; what mankind at one time consider as beautiful, fragrant, or savoury, may at another time, or among other nations, be regarded as deformed, disgustful, or ill-tasted. That flesh which the ancient Romans so much admired as to call it the food of the wise, was, among the Jews and the Druids, thought unfit to be eaten; and even the moderns, who, like the Romans, consider the flesh of this animal as a delicacy, have very different ideas as to dressing it. With us it is simply served up without much seasoning: but Apicius shews us the manner of dressing a hare in true Roman taste, with parsley, rice, vinegar, cummin seed, and coriander.‡

THE RABBIT.

The hare and the rabbit, though so very nearly resembling each other in form and disposition, are yet distinct kinds, as they refuse to mix with each other. Mr. Buffon

* Dictionnaire Raisonnée Liévre.

† Hist. Gen. des. Voyages, tom. iv. p. 171.

‡ Vid. Apicii, &c.

bred up several of both kinds in the same place; but from being at first indifferent, they soon became enemies; and their combats were generally continued until one of them was disabled or destroyed. However, though these experiments were not attended with success, I am assured that nothing is more frequent than an animal bred between these two, but which, like the mule, is marked with sterility. Nay, it has been actually known that the rabbit couples with animals of a much more distant nature; and there is at present in the Museum at Brussels, a creature covered with feathers and hair, and said to be bred between a rabbit and a hen. The fecundity of the rabbit is still greater than that of the hare; and if we should calculate the produce from a single pair in one year, the number would be amazing. They breed seven times in a year, and bring eight young ones each time. On a supposition, therefore, that this happens regularly, at the end of four years a couple of rabbits shall see a progeny of almost a million and half. From hence we must justly apprehend being overstocked by their increase; but, happily for mankind, their enemies are numerous, and their nature inoffensive; so that their destruction bears a near proportion to their fertility.

But although their numbers be diminished by every beast and bird of prey, and still more by man himself, yet there is no danger of their extirpation. The hare is a poor defenceless animal, that has nothing but its swiftness to depend on for safety; its numbers are, therefore, every day decreasing; and in countries that are well peopled, the species are so much kept under, that laws are made for their preservation. Still, however, it is most likely that they will be at last totally destroyed; and, like the wolf or the elk in some countries, be only kept in remembrance. But it is otherwise with the rabbit, its fecundity being greater, and its means of safety more certain. The hare seems to have more various arts and instincts to escape its pursuers, by doubling, squatting, and winding; the rabbit has but one art of defence alone, but in that one finds safety, by making itself a hole, where it continues a great part of the day, and breeds up its young; there it continues secure from the fox, the hound, the kite, and every other enemy.

Nevertheless, though this retreat be safe and convenient, the rabbit does not seem to be naturally fond of keeping there. It loves the sunny field and the open pasture; it seems to be a chilly animal, and dislikes the coldness of its under-ground habitation. It is, therefore, continually out, when it does not fear disturbance; and the female often brings forth her young at a distance from the warren, in a hole, not above a foot deep at the most. There she suckles them for about a month, covering them over with moss and grass, whenever she goes to pasture, and scratching them up at her return. It has been said, indeed, that this shallow hole without the warren is made lest the male should attack and destroy her young; but I have seen the male himself attend the young there, lead them out to feed, and conduct them back upon the return of the dam. This external retreat seems a kind of country house, at a distance from the general habitation; it is usually made near some spot of excellent pasture, or in the midst of a field of sprouting corn. To this both male and female often retire from the warren, lead their young by night to the food which lies so convenient, and, if not disturbed, continue there till they are grown up. There they find a greater variety of pasture than near the warren, which is generally eaten bare; and enjoy a warmer sun, by covering themselves up in a shallower hole. Whenever they are disturbed, they then forsake their retreat of pleasure for one of safety; they fly to the warren with their utmost speed; and if the way be short, there is scarcely any dog, how swift soever, that can overtake them.

But it does not always happen that these animals are possessed of one of these external apartments; they most usually bring forth their young in the warren, but always in a hole, separate from the male. On these occasions, the female digs herself a hole,* different from the ordinary one, by being more intricate; at the bottom of which she makes a more ample apartment. This done, she pulls off from her belly a good quantity of her hair, with which she makes a kind of bed for her young. During the two first days she never leaves them; and does not stir out but to procure nourishment, which she takes with the utmost

* Buffon.

dispatch; in this manner suckling her young for near six weeks, until they are strong, and able to go abroad themselves. During all this time, the male seldom visits their separate apartments; but when they are grown up, so as to come to the mouth of the hole, he then seems to acknowledge them as his offspring, takes them between his paws, smoothes their skin, and licks their eyes: all of them, one after the other, have an equal share in his caresses.

In this manner the rabbit, when wild, consults its pleasure and its safety; but those that are bred up tame, do not take the trouble of digging a hole, conscious of being already protected. It has also been observed,* that when people, to make a warren, stock it with tame rabbits, these animals, having been unaccustomed to the art of scraping a hole, continue exposed to the weather, and every other accident, without ever burrowing. Their immediate offspring also are equally regardless of their safety: and it is not till after two or three generations that these animals begin to find the necessity and convenience of an asylum, and practise an art which they could only learn from nature.

Rabbits of the domestic breed, like all other animals that are under the protection of man, are of various colours; white, brown, black, and mouse-colour. The black are the most scarce; the brown, white, and mouse-colour, are in greater plenty. Most of the wild rabbits are of a brown, and it is the colour which prevails among the species; for in every nest of rabbits, whether the parents be black or white, there are some brown ones found of the number. But, in England, there are many warrens stocked with the mouse-colour kinds, which some say came originally from an island in the river Humber, and which still continue their original colour, after a great number of successive generations. A gentleman,† who bred up tame rabbits for his amusement, gives the following account of their production: "I began" says he, "by having but one male and female only; the male was entirely white, and the female brown; but, in their posterity, the number of the brown by far exceeded those of any other colour: there were some

* Buffon. † Mr. Moutier, as quoted by Mr. Buffon

white, some party-coloured, and some black. It is surprising how much the descendants were obedient and submissive to their common parent; he was easily distinguished from the rest by his superior whiteness; and, however numerous the other males were, this kept them all in subjection. Whenever they quarrelled among each other, either for their females or provisions, as soon as he heard the noise, he ran up to them with all dispatch, and, upon his appearance, all was instantly reduced to peace and order. If he caught any of them in the fact, he instantly punished them, as an example to the rest. Another instance of his superiority was, that having accustomed them to come to me with the call of a whistle, the instant this signal was given I saw him marshalling them up, leading them the foremost, and then suffering them all to file off before him."

The rabbit,* though less than the hare, generally lives longer. As these animals pass the greater part of their lives in their burrow, where they continue at ease and unmolested, they have nothing to prevent the regularity of their health, or the due course of their nourishment. They are, therefore, generally found fatter than the hare; but their flesh is, notwithstanding, much less delicate. That of the old ones, in particular, is hard, tough, and dry; but it is said, that in warmer countries they are better tasted. This may very well be, as the rabbit, though so very plentiful in Great Britain and Ireland, is nevertheless a native of the warmer climates; and has been originally imported into these kingdoms from Spain. In that country, and in some of the islands in the Mediterranean, we are told that they once multiplied in such numbers as to prove the greatest nuisance to the natives. They at first demanded military aid to destroy them; but soon after they called in the assistance of ferrets, which originally came from Africa, and these, with much more ease and expedition, contrived to lessen the calamity. In fact, rabbits are found to love a warm climate, and to be incapable of bearing the cold of the north; so that in Sweden they are obliged to be littered in the houses. It is otherwise in all the tropical climates, where they are extremely common, and where they seldom burrow, as with us. The

* Mr. Moutier, as quoted by Mr. Buffon.

English counties that are most noted for these animals, are Lincolnshire, Norfolk, and Cambridgeshire. They delight in grounds of a sandy soil, which are warmer than those of clay; and which also furnish a softer and finer pasture.

The tame rabbits are larger than the wild ones, from their taking more nourishment, and using less exercise; but their flesh is not so good, being more insipid and softer. In order to improve it, they are chiefly fed upon bran, and are stinted in their water; for if indulged in too great plenty of moist food, they are apt, as the feeders express it, to grow rotten. The hair or fur is a very useful commodity, and is employed in England for several purposes, as well when the skin is dressed with it on, as when it is pulled off. The skins, especially the white, are used for lining clothes, and are considered as a cheap imitation of ermine. The skin of the male is usually preferred, as being the most lasting, but it is coarser; that on the belly, in either sex, is the best and finest. But the chief use made of rabbit's fur is in the manufacture of hats; it is always mixed, in certain proportions, with the fur of the beaver; and it is said to give the latter more strength and consistence.

The Syrian rabbit, like all other animals bred in that country, is remarkable for the length of its hair; it falls along the sides in wavy wreaths, and is in some places curled at the end, like wool; it is shed once a year in large masses; and it often happens that the rabbit, dragging a part of its robe on the ground, appears as if it had got another leg, or a longer tail. There are no rabbits naturally in America; however, those that have been carried from Europe, are found to multiply in the West India islands in great abundance. In other parts of that continent, they have animals that, in some measure, resemble the rabbits of Europe; and which most European travellers have often called *hares* or *rabbits*, as they happened to be large or small. Their giving them even the name will be a sufficient excuse for my placing them among animals of the hare kind; although they may differ in many of the most essential particulars. But before we go to the new continent, we will first examine such as bear even a distant resemblance to the hare kind at home.

THE SQUIRREL.*

THERE are few readers that are not so well acquainted with the figure of a Squirrel as that of the rabbit; but supposing it unknown to any, we might give them some idea of its form, by comparing it to a rabbit, with shorter ears, and a longer tail. The tail, indeed, is alone sufficient to distinguish it from all others, as it is extremely long, beautiful, and bushy, spreading like a fan, and which, when thrown up behind, covers the whole body. This serves the little animal for a double purpose; when erected, it serves, like an umbrella, as a secure protection from the injuries of the heat and cold; and when extended, it is very instrumental in promoting those vast leaps that the squirrel takes from tree to tree; nay, some assert that it answers still a third purpose, and when the squirrel takes the water, which it sometimes does upon a piece of bark, that its tail serves it instead of a sail.†

There are few wild animals in which there are so many varieties as in the squirrel. The *common squirrel* is of the size of a small rabbit, and is rather of a more reddish brown. The belly and breast are white; and the ears beautifully ornamented with long tufts of hair, of a deeper colour than that on the body. The eyes are large, black, and lively; the legs are short and muscular, like those of the rabbit; but the toes longer, and the claws sharper, so as to fit it for climbing. When it eats, or dresses itself, it sits erect, like the hare or rabbit, making use of its fore-legs as hands; and chiefly resides in trees. The *gray Virginian squirrel*, which Mr. Buffon calls the *petit gris*, is larger than a rabbit, and of a grayish colour. Its body and limbs are thicker than those of the common squirrel; and its ears are shorter, and without tufts at the point. The upper part of the body, and external part of the legs, are of a fine whitish gray, with a beautiful red streak on each side lengthways. The tail is covered with very long gray hair, variegated with black and white towards the extremity. This variety seems to be common to both continents; and in

* This elegant tribe of quadrupeds have two front teeth in each jaw; those in the upper jaw being wedge-shaped, those in the lower pointed: on each side in the upper jaw there are five grinders, and four in the lower: they have perfect collar bones, and in most species the tail is shed on each side.

† Klein. Linnæus.

Sweden is seen to change colour in winter. The *Barbary squirrel*, of which Mr. Buffon makes three varieties, is of a mixed colour, between red and black. Along the sides there are white and brown lines, which render this animal very beautiful; but what still adds to its elegance is, that the belly is of a sky blue, surrounded with white. Some of these hold up their tail erect; and others throw it forward over their body. The *Siberian white squirrel* is of the size of a common squirrel. The *Carolina black squirrel* is much bigger than the former, and sometimes tipped with white at all the extremities. The *Brasilian squirrel*, which Mr. Buffon calls the *coquallin*, is a beautiful animal of this kind, and very remarkable for the variety of its colours. Its belly is of a bright yellow; its head and body variegated with white, black, brown, and orange colour. It wants the tufts at the extremity of its ears; and does not climb trees, as most of the kind are seen to do. To this list may be added the *little ground squirrel of Carolina*, of a reddish colour, and blackish stripes on each side; and, like the former, not delighting in trees. Lastly, the *squirrel of New Spain*, which is of a deep iron-gray colour, with seven longitudinal whitish streaks along the sides of the male, and five along those of the female. As for the flying squirrels, they are a distinct kind, and shall be treated of by themselves.

These, which I suppose to be but a few of the numerous varieties of the squirrel, sufficiently serve to shew how extensive this animal is diffused over all parts of the world. It is not to be supposed, however, that every variety is capable of sustaining every climate; for few animals are so tender, or so little able to endure a change of abode, as this. Those bred in the tropical climates, will only live near a warm sun; while, on the contrary, the squirrel of Siberia will scarce endure the temperature of ours. These varieties do not only differ, in their constitutions and colour, but in their dispositions also; for while some live on the tops of trees, others feed, like rabbits, on vegetables below. Whether any of these, so variously coloured, and so differently disposed, would breed among each other, we cannot tell: and since, therefore, we are left in uncertainty upon this point, we are at liberty either to consider each as a distinct species by itself; or only a variety, that accident

might have originally produced, and that the climate or soil might have continued. For my own part, as the original character of the squirrel is so strongly marked upon them all, I cannot help considering them in the latter point of view; rather as the common descendants of one parent, than originally formed with such distinct similitudes.

The squirrel is a beautiful little animal,* which is but half savage; and which, from the gentleness and innocence of its manners, deserves our protection. It is neither carnivorous nor hurtful: its usual food is fruits, nuts, and acorns; it is cleanly, nimble, active, and industrious; its eyes are sparkling, and its physiognomy marked with meaning. It generally, like the hare and rabbit, sits up on its hinder legs, and uses the fore-paws as hands; these have five *claws* or *toes*, as they are called, and one of them is separated from the rest like a thumb. This animal seems to approach the nature of birds, from its lightness, and surprising agility on the tops of trees. It seldom descends to the ground, except in case of storms, but jumps from one branch to another; feeds, in spring, on the buds and young shoots; in summer, on the ripening fruits, and particularly the young cones of the pine-tree. In autumn it has an extensive variety to feast upon; the acorn, the filbert, the chesnut, and the wilding. This season of plenty, however, is not spent in idle enjoyment; the provident little animal gathers at that time its provisions for the winter; and cautiously foresees the season when the forest shall be stripped of its leaves and fruitage.

Its nest is generally formed among the large branches of a great tree, where they begin to fork off into small ones. After choosing the place where the timber begins to decay, and an hollow may the more easily be formed, the squirrel begins by making a kind of level between the forks; and then bringing moss, twigs, and dry leaves, it binds them together with great art, so as to resist the most violent storm. This is covered up on all sides; and has but a single opening at top, which is just large enough to admit the little animal; and this opening is itself defended from the weather by a kind of canopy, made in the fashion of a cone, so that it throws off the rain, though never so heavy. The nest thus formed, with a very little opening above, is, nevertheless,

* Buffon.

very commodious and roomy below; soft, well knit together, and every way convenient and warm. In this retreat the little animal brings forth its young, shelters itself from the scorching heat of the sun, which it seems to fear, and from the storms and inclemency of winter, which it is still less capable of supporting. Its provision of nuts and acorns is seldom in its nest, but in the hollows of the tree, laid up carefully together, and never touched but in cases of necessity. Thus one single tree serves for a retreat and a storehouse; and without leaving it during the winter, the squirrel possesses all those enjoyments that its nature is capable of receiving. But it sometimes happens that its little mansion is attacked by a deadly and powerful foe. The martin goes often in quest of a retreat for its young, which it is incapable of making for itself; for this reason it fixes upon the nest of a squirrel, and, with double injustice, destroys the tenant, and then takes possession of the mansion.

However, this is a calamity that but seldom happens: and, of all other animals, the squirrel leads the most frolicksome playful life, being surrounded with abundance, and having few enemies to fear. They are in heat early in spring; when, as a modern naturalist says,* it is very diverting to see the female feigning an escape from the pursuit of two or three males, and to observe the various proofs which they give of their agility, which is then exerted in full force. Nature seems to have been particular in her formation of these animals for propagation: however, they seldom bring forth above four or five young at a time; and that but once a year. The time of their gestation seems to be about six weeks; they are pregnant in the beginning of April, and bring forth about the middle of May.

The squirrel is never found in the open fields, nor yet in copses or underwoods: it always keeps in the midst of the tallest trees, and, as much as possible, shuns the habitations of men. It is extremely watchful; if the tree in which it resides be but touched at the bottom, the squirrel instantly takes the alarm, quits its nest, at once flies off to another tree, and thus travels, with great ease, along the tops of the forest, until it finds itself perfectly out of danger. In this manner it continues for some hours at a distance from

* British Zoology.

home, until the alarm be past away; and then it returns, by paths that to all quadrupeds but itself are utterly impassable. Its usual way of moving is by bounds; these it takes from one tree to another, at forty feet distance; and if at any time it is obliged to descend, it runs up the side of the next tree with amazing facility. It has an extremely sharp piercing note, which most usually expresses pain; it has another, more like the purring of a cat, which it employs when pleased; at least it appeared so in that from whence I have taken a part of this description.

In Lapland, and the extensive forests to the north, the squirrels are observed to change their habitation, and to remove in vast numbers from one country to another. In these migrations they are generally seen by thousands, travelling directly forward; while neither rocks, forests, nor even the broadest waters, can stop their progress. What I am going to relate appears so extraordinary, that were it not attested by numbers of the most credible historians, among whom are Klein and Linnæus, it might be rejected, with that scorn with which we treat imposture or credulity: however, nothing can be more true than that when these animals, in their progress, meet with broad rivers, or extensive lakes, which abound in Lapland, they take a very extraordinary method of crossing them. Upon approaching the banks, and perceiving the breadth of the water, they return, as if by common consent, into the neighbouring forest, each in quest of a piece of bark, which answers all the purposes of boats for wafting them over. When the whole company are fitted in this manner, they boldly commit their little fleet to the waves; every squirrel sitting on its own piece of bark, and fanning the air with its tail, to drive the vessel to its desired port. In this orderly manner they set forward, and often cross lakes several miles broad. But it too often happens that the poor mariners are not aware of the dangers of their navigation; for although at the edge of the water it is generally calm, in the midst it is always more turbulent. There the slightest additional gust of wind oversets the little sailor and his vessel together. The whole navy, that but a few minutes before rode proudly and securely along, is now overturned, and a shipwreck of two or three thousand sail ensues. This, which is so unfortunate for the little

animal, is generally the most lucky accident in the world for the Laplander on the shore; who gathers up the dead bodies as they are thrown in by the waves, eats the flesh, and sells the skins for about a shilling the dozen.*

The squirrel is easily tamed, and it is then a very familiar animal. It loves to lie warm, and will often creep into a man's pocket or his bosom. It is usually kept in a box, and fed with hazel nuts. Some find amusement in observing with what ease it bites the nut open, and eats the kernel. In short, it is a pleasing pretty little domestic; and its tricks and habitudes may serve to entertain a mind unequal to stronger operations.

THE FLYING SQUIRREL.

Mr. Ray was justly of opinion, that the Flying Squirrel might more properly be said to be of the rat kind, because its fur is shorter than in other squirrels, and its colours also more nearly approach the former. However, as mankind have been content to class it among the squirrels, it is scarcely worth making a new distinction in its favour. This little animal, which is frequently brought over to England, is less than a common squirrel, and bigger than a field mouse. Its skin is very soft, and elegantly adorned with a dark fur in some places, and light gray in others. It has large prominent black and very sparkling eyes, small ears, and very sharp teeth, with which it gnaws any thing quickly. When it does not leap, its tail, which is pretty enough, lies close to its back; but when it takes its spring, the tail is moved backwards and forwards from side to side. It is said to partake somewhat of the nature of the squirrel, of the rat, and of the dormouse; but that in which it is distinguished from all other animals, is its peculiar conformation for taking those leaps that almost look like flying. It is, indeed, amazing to see it at one bound dart above a hundred yards from one tree to another. They are assisted in this spring by a very peculiar formation of the skin that extends from the fore-feet to the hinder; so that when the animal stretches its fore-legs forward and its hind-legs backward, this skin is spread out between them, somewhat like that between the legs of a bat. The surface of the body being thus increased,

* Œuvres de Regnard.

the little animal keeps buoyant in the air until the force of its first impulsion is expired, and then it descends. This skin, when the creature is at rest, or walking, continues wrinkled up on its sides; but when its limbs are extended, it forms a kind of web between them of above an inch broad on either side, and gives the whole body the appearance of a skin floating in the air. In this manner the flying squirrel changes place, not like a bird, by repeated strokes of its wings, but rather like a paper kite, supported by the expansion of the surface of its body; but with this difference, however, that, being naturally heavier than the air, instead of mounting it descends; and that jump, which upon the ground would not be above forty yards, when from a higher tree to a lower may be above a hundred.

This little animal is more common in America than in Europe, but not very commonly to be seen in either. It is usually found, like the squirrel, on the tops of trees; but, though better fitted for leaping, it is of a more torpid disposition, and is seldom seen to exert its powers; so that it is often seized by the polecat and the martin. It is easily tamed, but apt to break away whenever it finds an opportunity. It does not seem fond of nuts or almonds, like other squirrels, but is chiefly pleased with the sprouts of the birch, and the cones of the pine. It is fed in its tame state with bread and fruits; it generally sleeps by day, and is always most active by night. Some naturalists gravely caution us not to let it get among our corn fields, where, they tell us, it will do a great deal of damage, by cropping the corn as soon as it begins to ear!*

THE MARMOUT.

From the description of the squirrel and its varieties, we proceed to a different tribe of animals, no way indeed resembling the squirrel, but still something like the rabbit and the hare. We are to keep these two animals still in view as the centre of our comparison; as objects to which many others may bear some similitude, though they but little

* He may easily be made tame; but he is apt to do a great deal of damage in the corn fields, because he will crop the corn as soon as it begins to ear. Brooke's Nat. Hist.

approach each other. Among the hare kind is the Marmout, which naturalists have placed either among the hare kind or the rat kind, as it suited their respective systems. In fact, it bears no great resemblance to either; but of the two it approaches much nearer the hare, as well in the make of its head as in its size, in its bushy tail, and particularly in its chewing the cud, which alone is sufficient to determine our choice in giving it its present situation. How it ever came to be degraded into the rat or mouse I cannot conceive, for it no way resembles them in size, being nearly as big as a hare; or in its disposition, since no animal is more tractable, nor more easily tamed.

The marmout is, as was said, almost as big as a hare, but it is more corpulent than a cat, and has shorter legs. Its head pretty nearly resembles that of a hare, except that its ears are much shorter. It is clothed all over with very long hair, and a shorter fur below. These are of different colours, black and gray. The length of the hair gives the body the appearance of greater corpulence than it really has, and at the same time shortens the feet, so that its belly seems touching the ground. Its tail is tufted and well furnished with hair, and it is carried in a straight direction with its body. It has five claws behind, and only four before. These it uses, as the squirrel does, to carry its food to its mouth; and it usually sits upon its hinder parts to feed, in the manner of that little animal.

The marmout is chiefly a native of the Alps; and when taken young is tamed more easily than any other wild animal, and almost as perfectly as any of those that are domestic.* It is readily taught to dance, to wield a cudgel, and to obey the voice of its master. Like the cat, it has an antipathy to the dog; and when it becomes familiar to the family, and is sure of being supported by its master, it attacks and bites even the largest mastiff. From its squat muscular make, it has great strength joined to great agility. It has four large cutting teeth, like all those of the hare kind, but it uses them to much more advantage, since in this animal they are very formidable weapons of defence. However, it is in general a very inoffensive animal; and, except its enmity to dogs, seems to live in friendship with

* Buffon, from whence the remainder of this description is taken. N. B. He takes it from Gesner, vol. xvii.

every creature, unless when provoked. If not prevented, it is very apt to gnaw the furniture of a house, and even to make holes through wooden partitions; from whence, perhaps, it has been compared to the rat. As its legs are very short, and made somewhat like those of a bear, it is often seen sitting up, and even walking on its hind-legs in like manner; but with the fore-paws, as was said, it uses to feed itself in the manner of a squirrel. Like all of the hare kind, it runs much swifter up hill than down; it climbs trees with great ease, and runs up the clefts of rocks or the contiguous walls of houses with great facility. It is ludicrously said that the Savoyards, who are the only chimney-sweepers of Paris, have learned this art from the marmout, which is bred in the same country.

These animals eat indiscriminately of whatever is presented to them; flesh, bread, fruits, herbs, roots, pulse, and insects. But they are particularly fond of milk, and butter. Although less inclined to petty thefts than the cat, yet they always try to steal into the dairy, where they lap up the milk like a cat, purring all the while like that animal, as an expression of their being pleased. As to the rest, milk is the only liquor they like. They seldom drink water, and refuse wine. When pleased or caressed, they often yelp like puppies; but when irritated or frighted, they have a piercing note that hurts the ear. They are very cleanly animals, and like the cat retire upon necessary occasions; but their bodies have a disagreeable scent, particularly in the heat of summer. This tinctures their flesh, which, being very fat and firm, would be very good, were not this flavour always found to predominate.

We have hitherto been describing affections in this animal which it has in common with many others; but we now come to one which particularly distinguishes it from all others of this kind, and indeed from every other quadruped, except the bat and the dormouse; this is its sleeping during the winter. The marmout, though a native of the highest mountains, and where the snow is never wholly melted, nevertheless seems to feel the influence of the cold more than any other, and in a manner has all its faculties chilled up in winter. This extraordinary suspension of life and motion for more than half the year, deserves our wonder, and excites our attention to consider the manner of such

temporary death, and the subsequent revival. But first to describe, before we attempt to discuss.

The marmout, usually at the end of September, or the beginning of October, prepares to fit up its habitation for the winter, from which it is never seen to issue till about the beginning or the middle of April. This animal's little retreat is made with great precaution, and fitted up with art. It is a hole on the side of a mountain, extremely deep, with a spacious apartment at the bottom, which is rather longer than it is broad. In this several marmouts can reside at the same time, without crowding each other, or injuring the air they breathe. The feet and claws of this animal seem made for digging; and, in fact, they burrow into the ground with amazing facility, scraping up the earth like a rabbit, and throwing back what they have thus loosened behind them. But the form of their hole is still more wonderful; it resembles the letter Y; the two branches being two openings, which conduct into one channel, which terminates in their general apartment that lies at the bottom. As the hole is made on the declivity of a mountain, there is no part of it on a level but the apartment at the end. One of the branches or openings issues out, sloping downwards; and this serves as a kind of sink or drain to the whole family, where they make their excrements, and where the moisture of the place is drawn away. The other branch, on the contrary, slopes upwards, and this serves as their door, upon which to go out and in. The apartment at the end is very warmly stuccoed round with moss and hay, of both which they make an ample provision during the summer. As this is a work of great labour, so it is undertaken in common; some cut the finest grass, others gather it, and others take their turns to drag it into their hole. Upon this occasion, as we are told, one of them lies on its back, permits the hay to be heaped upon its belly, keeps its paws upright to make greater room; and in this manner, lying still upon its back, it is dragged by the tail, hay and all, to their common retreat. This also some give as a reason for the hair being generally worn away on their backs, as is usually the case; however, a better reason for this may be assigned, from their continually rooting up holes, and passing through narrow openings. But, be this as it will, certain it

is that they all live together, and work in common to make their habitation as snug and convenient as possible. In it they pass three parts of their lives; into it they retire when the storm is high; in it they continue while it rains; there they remain when apprehensive of danger, and never stir out except in fine weather, never going far from home even then. Whenever they venture abroad, one is placed as a sentinel, sitting upon a lofty rock, while the rest amuse themselves in playing along the green fields, or are employed in cutting grass and making hay for their winter's convenience. Their trusty sentinel, when an enemy, a man, a dog, or a bird of prey, approaches, apprises its companions with a whistle, upon which they all make home, the sentinel himself bringing up the rear.

But it must not be supposed that this hay is designed for provision; on the contrary, it is always found in as great plenty in their holes at the end as at the beginning of winter; it is only sought for the convenience of their lodging, and the advantages of their young. As to provision, they seem kindly apprised by Nature that during the winter, they shall not want any; so that they make no preparations for food, though so diligently employed in fitting up their abode. As soon as they perceive the first approaches of the winter, during which their vital motions are to continue in some measure suspended, they labour very diligently to close up the two entrances of their habitation, which they effect with such solidity, that it is easier to dig up the earth any where else than where they have closed it. At that time they are very fat, and some of them are found to weigh above twenty pounds; they continue so for even three months more; but by degrees their flesh begins to waste, and they are usually very lean by the end of winter. When their retreat is opened, the whole family is then discovered, each rolled into a ball, and covered up under the hay. In this state they seem entirely lifeless; they may be taken away, and even killed without their testifying any great pain; and those who find them in this manner, carry them home, in order to breed up the young and eat the old ones. A gradual and gentle warmth revives them; but they would die if too suddenly brought near the fire, or if their juices were too quickly liquefied.

Strictly speaking, says Mr. Buffon, these animals cannot

be said to sleep during the winter; it may be called rather a *torpor*, a stagnation of all the faculties.* This torpor is produced by the congelation of their blood, which is naturally much colder than that of all other quadrupeds. The usual heat of man and other animals is about thirty degrees above congelation; the heat of these is not above ten degrees. Their internal heat is seldom greater than that of the temperature of the air. This has been often tried by plunging the ball of the thermometer into the body of a living dormouse, and it never rose beyond its usual pitch in air, and sometimes it sunk above a degree. It is not surprising, therefore, that these animals, whose blood is so cold naturally, should become torpid, when the external cold is too powerful for the small quantity of heat in their bodies yet remaining; and this always happens when the thermometer is not more than ten degrees above congelation. This coldness Mr. Buffon has experienced in the blood of the bat, the dormouse, and the hedge-hog, and with great justice he extends the analogy to the marmout, which, like the rest, is seen to sleep all the winter. This torpid state continues as long as the cause which produces it continues; and it is very probable that it might be lengthened out beyond its usual term, by artificially prolonging the cold: if, for instance, the animal were rolled up in wool, and placed in a cold cellar, nearly approaching to, but not quite so cold as an ice-house, for that would kill them outright, it would remain perhaps a whole year in its state of insensibility. However this be, if the heat of the air be above ten degrees, these animals are seen to revive; and if it be continued in that degree of temperature, they do not become torpid, but eat and sleep at proper intervals, like all other quadrupeds whatever.

From the above account we may form some conception of the state in which these animals continue during the winter. As in some disorders, where the circulation is extremely languid, the appetite is diminished in proportion, so in these the blood scarcely moving, or only moving in the greater vessels, they want no nourishment to repair what is worn away by its motions. They are seen, indeed by slow degrees to become leaner in proportion to the slow attrition

* Buffon, vol. xvi. Loirs.

of their fluids; but this is not perceptible, except at the end of some months. Man is often known to gather nourishment from the ambient air; and these also may, in some measure, be supplied in the same manner; and having sufficient motion in their fluids to keep them from putrefaction, and just sufficient nourishment to supply the waste of their languid circulation, they continue rather feebly alive than sleeping.

These animals produce but once a year, and usually bring forth but three or four at a time. They grow very fast, and the extent of their lives is not above nine or ten years; so that the species is neither numerous nor very much diffused. They are chiefly found in the Alps, where they seem to prefer the brow of the highest mountains to the lowest ranges, and the sunny side to that in the shade. The inhabitants of the country where they chiefly reside, when they observe the hole, generally stay till winter before they think proper to open it; for if they begin too soon, the animal wakes, and as it has a surprising faculty of digging, makes its hole deeper in proportion as they follow. Such as kill it for food, use every art to improve the flesh, which is said to have a wild taste, and to cause vomitings.* They, therefore, take away the fat, which is in great abundance, and salt the remainder, drying it somewhat in the manner of bacon. Still, however, it is said to be very indifferent eating. This animal is found in Poland under the denomination of the *Bobak*, entirely resembling that of the Alps, except that the latter has a toe more upon its fore-foot than the former. It is found also in Siberia under the name of the *Jevraska*, being rather smaller than either of the other two. Lastly, it is found in Canada by the appellation of the *Monax*, differing only from the rest in having a bluish snout and a longer tail.

THE AGOUTI.†

From the marmout, which differs from the hare so much in the length of its fur, we go to the Agouti, another species

* Dictionnaire Raisonnée, vol. iii. p. 29.

† This animal, together with the Paca, Apera, Guinea Pig, Capibara, and a few other species, are now arranged under the general appellation,

equally differing in the shortness of its hair. These bear some rude resemblance to the hare and the rabbit in their form and manner of living, but sufficiently differing to require a particular description. The first of these, and that the largest, as was hinted above, is called the *agouti*. This animal is found in great abundance in the southern parts of America, and has by some been called the *rabbit* of that continent. But, though in many respects it resembles the rabbit, yet still in many more it differs, and is, without all doubt, an animal peculiar to the new world only. The agouti is about the size of a rabbit, and has a head very much resembling it, except that the ears are very short in comparison. It resembles the rabbit also in the arched form of its back, in the hind legs being longer than the fore, and in having four great cutting-teeth, two above and two below; but then it differs in the nature of its hair, which is not soft and downy as in the rabbit, but hard and bristly like that of a sucking-pig, and of a reddish brown colour. It differs also in the tail, which is even shorter than the rabbit, and entirely destitute of hair. Lastly, it differs in the number of its toes, having but three on the hinder feet, whereas the rabbit has five. All these distinctions, however, do not countervail against its general form, which resembles that of a rabbit, and most travellers have called it by that name.

As this animal differs in form, it differs still more in habitudes and disposition. As it has the hair of a hog, so also it has its voraciousness.* It eats indiscriminately of all things; and, when satiated, hides the remainder, like the dog or the fox, for a future occasion. It takes a pleasure in gnawing and spoiling every thing it comes near. When irritated, its hair stands erect along the back, and, like the rabbit, it strikes the ground violently with its hind feet. It does not dig a hole in the ground, but burrows in the hollows of trees. Its ordinary food consists

of Cavy. They are distinguished by having two wedge-shaped front teeth in each jaw, and eight grinders on each side in both jaws; they have from four to six toes on the fore-feet, and from three to five on the hinder: the tail is very short or none, and they have no collar-bones. They are inhabitants of warmer regions, live entirely on vegetable substances, reside under ground or beneath the roots of trees, and move with a slow and kind of leaping pace.

* Buffon.

of the roots of the country, potatoes, and yams, and such fruits as fall from the trees in autumn. It uses its fore-paws, like the squirrel, to carry it food to its mouth: and as its hind feet are longer than the fore, it runs very swiftly upon plain ground or up a hill, but upon a descent it is in danger of falling. Its sight is excellent, and its hearing equals that of any other animal; whenever it is whistled to, it stops to hearken. The flesh of such as are fat and well fed is tolerable food, although it has a peculiar taste, and is a little tough. The French dress it like a sucking-pig, as we learn from Mr. Buffon's account; but the English dress it with a pudding in its belly, like a hare. It is hunted by dogs; and whenever it has got into a sugar-ground, where the canes cover the place, it is easily overtaken, for it is embarrassed every step it takes, so that a man may easily come up with it without any other assistance. When in the open country, it usually runs with great swiftness before the dogs, until it gains its retreat, within which it continues to hide, and nothing but filling the hole with smoke can force it out. For this purpose, the hunter burns fagots or straw at the entrance, and conducts the smoke in such a manner that it fills the whole cavity. While this is doing, the poor little animal seems sensible of its danger, and begs for quarter with a most plaintive cry, seldom quitting its hole till the utmost extremity. At last, when half-suffocated, it issues out, and trusts once more to its speed for protection. When still forced by the dogs, and incapable of making good a retreat, it turns upon the hunters, and with its hair bristling like a hog, and standing upon its hind-feet, it defends itself very obstinately. Sometimes it bites the legs of those that attempt to take it, and will take out the piece wherever it fixes its teeth.*

Its cry, when disturbed or provoked, resembles that of a sucking-pig. If taken young, it is easily tamed, continues to play harmlessly about the house, and goes out and returns of its own accord. In a savage state it usually continues in the woods, and the female generally chooses the most obscure parts to bring forth her young. She there prepares a bed of leaves and dry grass, and generally

* Ray's Synop.

brings forth two at a time. She breeds twice or thrice a year, and carries her young from one place to another, as convenience requires, in the manner of a cat. She generally lodges them, when three days old, in the hollow of a tree, suckling them but a very short time; for they soon come to perfection, and it should consequently follow that they soon grow old.

THE PACA.

The Paca is an animal also of South America, very much resembling the former, and like it has received the name of the *American rabbit*, but with as little propriety. It is about the size of a hare, or rather larger, and in figure somewhat like a sucking-pig, which it also resembles in its grunting and its manner of eating. It is, however, most like the agouti, although it differs in several particulars. Like the agouti, it is covered rather with coarse hair than a downy fur. But then it is beautifully marked along the sides with small ash-coloured spots, upon an amber-coloured ground; whereas the agouti is pretty much of one reddish colour. The paca is rather more thick and corpulent than the agouti; its nose is shorter, and its hind-feet have five toes; whereas the agouti has but three. As to the rest, this animal bears some distant resemblance to a rabbit, the ears are naked of hair, and somewhat sharp, the upper jaw is somewhat longer than the lower, the teeth, the shape of the head, and the size of it, are like to those of a rabbit. It has a short tail likewise, though not tufted; and its hinder legs are longer than the fore. It also burrows in the ground like that animal, and from this similitude alone travellers might have given it the name.

The paca does not make use of its fore-paws, like the squirrel or the agouti, to carry its food to the mouth, but hunts for it on the ground, and roots like a hog, It is generally seen along the banks of rivers, and is only to be found in the moist and warm countries of South America. It is a very fat animal, and in this respect much preferable to the agouti, that is most commonly found lean. It is eaten, skin and all, like a young pig, and is considered as a great delicacy. Like the former little animal, it defends

itself to the last extremity, and is very seldom taken alive. It is persecuted not only by man, but by every beast and bird of prey, who all watch its motions, and, if it ventures at any distance from its hole, are sure to seize it. But although the race of these little animals is thus continually destroyed, it finds some refuge in its hole, from the general combination; and breeds in such numbers, that the diminution is not perceptible.

To these animals may be added others, very similar, both in form and disposition; each known by its particular name in its native country, but which travellers have been contented to call rabbits or hares; of which we have but indistinct notice. The TAPETI, or the BRASILIAN RABBIT, is in shape like our English ones, but is much less, being said to be not above twice the size of a dormouse. It is reddish on the forehead, and a little whitish under the throat. It is remarkable for having no tail; but it has long ears, with whiskers, like our rabbits, and black eyes. It does not burrow, like ours; but lives at large, like the hare.

The APEREA is called also by some the BRASILIAN RABBIT, being an animal that seems to partake of the nature of a rabbit and a rat. The ears are like those of a rat, being short and round; but the other parts are like those of a rabbit, except that it has but three toes on the hinder legs, like the agouti.

To these imperfect sketches of animals little known, others less known might be added; for as nature becomes more diminutive, her operations are less attentively regarded. I shall only, therefore, add one animal more to this class, and that very well known; I mean the Guinea-pig; which Brisson places among those of the rabbit kind; and as I do not know any other set of animals with which it can be so well compared, I will take leave to follow his example.

THE GUINEA-PIG.

THE Guinea-pig is a native of the warmer climates; but has been so long rendered domestic, and so widely diffused, that it is now become common in every part of the world. There are few unacquainted with the figure of this little animal; in some places it is considered as the principal favourite; and is often found even to displace the lap-dog.

It is less than a rabbit, and its legs are shorter; they are scarcely seen, except when it moves; and the neck also is so short, that the head seems stuck upon the shoulders. The ears are short, thin, and transparent; the hair is like that of a sucking-pig, from whence it has taken the name; and it wants even the vestiges of a tail. In other respects, it has some similitude to the rabbit. When it moves, its body lengthens like that animal; and when it is at rest, it gathers up in the same manner. Its nose is formed with the rabbit lip, except that its nostrils are much farther asunder. Like all other animals in a domestic state, its colours are different; some are white, some are red, and others both red and white. It differs from the rabbit in the number of its toes, having four toes on the feet before, and but three on those behind. It strokes its head with the fore-feet, like the rabbit; and, like it, sits upon the hind-feet; for which purpose there is a naked callous skin on the back part of the legs and feet.

These animals are, of all others, the most helpless and inoffensive.* They are scarcely possessed of courage sufficient to defend themselves against the meanest of all quadrupeds, a mouse. Their only animosity is exerted against each other; for they will often fight very obstinately; and the stronger is often known to destroy the weaker. But against all other aggressors, their only remedy is patience and non-resistance. How, therefore, these animals, in a savage state, could contrive to protect themselves, I have not been able to learn; as they want strength, swiftness, and even the natural instinct so common to almost every other creature.

As to their manner of living among us, they owe their lives entirely to our unceasing protection. They must be constantly attended, shielded from the excessive colds of the winter, and secured against all other domestic animals, which are apt to attack them, from every motive, either of appetite, jealousy, or experience of their pusillanimous nature. Such, indeed, is their stupidity, that they suffer themselves to be devoured by the cats without resistance; and, differing from all other creatures, the female sees her young destroyed without once attempting to protect them. Their usual food is bran, parsley, or cabbage-leaves; but there is scarce a

* This history is partly taken from the Amænitates Academicæ, vol. iv. p. 202.

vegetable cultivated in our gardens that they will not gladly devour. The carrot-top is a peculiar dainty, as also salad; and those who would preserve their healths, would do right to vary their food; for if they be continued on a kind too succulent or too dry, the effects are quickly perceived upon their constitution. When fed upon recent vegetables, they seldom drink. But it often happens that, conducted by nature, they seek drier food, when the former disagrees with them. They then gnaw clothes, paper, or whatever of this kind they meet with; and on these occasions they are seen to drink like most other animals, which they do by lapping. They are chiefly fond of new milk; but, in case of necessity, are content with water.

They move pretty much in the manner of rabbits, though not near so swiftly; and when confined in a room, seldom cross the floor, but generally keep along the wall. The male usually drives the female on before him, for they never move abreast together, but constantly the one seems to tread in the footsteps of the preceding. They chiefly seek for the darkest recesses, and the most intricate retreats; where, if hay be spread as a bed for them, they continue to sleep together, and seldom venture out but when they suppose all interruption removed. On these occasions they act as rabbits; they swiftly move forward from their bed, stop at the entrance, listen, look round, and if they perceive the slightest approach of danger, they run back with precipitation. In very cold weather, however, they are more active, and run about in order to keep themselves warm.

They are a very cleanly animal, and very different from that whose name they go by. If the young ones happen to fall into the dirt, or be any other way discomposed, the female takes such an aversion to them, that she never permits them to visit her more. Indeed, her whole employment, as well as that of the male, seems to consist in smoothing their skins, in disposing their hair, and improving its gloss. The male and female take this office by turns; and when they have thus brushed up each other, they then bestow all their concern upon their young, taking particular care to make their hair lie smooth, and biting them if they appear refractory. As they are so solicitous for elegance themselves, the place where they are kept must be regularly cleaned, and a new bed of hay provided for them at least every week. Being

natives of a warm climate, they are naturally chilly in ours; cleanliness, therefore, assists warmth and expels moisture. They may be thus reared, without the aid of any artificial heat; but, in general, there is no keeping them from the fire in winter, if they be once permitted to approach it.

When they go to sleep, they lie flat on their bellies, pretty much in their usual posture; except that they love to have their fore-feet higher than their hinder. For this purpose they turn themselves several times round before they lie down, to find the most convenient situation. They sleep like the hare, with their eyes half open; and continue extremely watchful, if they suspect danger. The male and female are never seen both asleep at the same time; but while he enjoys his repose, she remains upon the watch, silently continuing to guard him, and her head turned towards the place where he lies. When she supposes that he has had his turn, she then awakes him with a kind of murmuring noise, goes to him, forces him from his bed, and lies down in his place. He then performs the same good turn for her; and continues watchful till she also has done sleeping.

These animals are exceedingly salacious, and generally are capable of coupling at six weeks old. The female never goes with young above five weeks; and usually bring forth from three to five at a time; and this not without pain. But what is very extraordinary, the female admits the male the very day she has brought forth, and becomes again pregnant; so that their multiplication is astonishing. She suckles her young but about twelve or fifteen days; and during that time does not seem to know her own; for if the young of any other be brought, though much older, she never drives them away, but suffers them even to drain her, to the disadvantage of her own immediate offspring. They are produced with the eyes open, like all others of the hare kind; and in about twelve hours, equal even to the dam in agility. Although the dam has but two teats, yet she abundantly supplies them with milk; and they are also capable of feeding upon vegetables, almost from the very beginning. If the young ones are permitted to continue together, the stronger, as in all other societies, soon begin to govern the weak. Their contentions are often long and obstinate; and their jealousies very apparent. Their disputes are usually for the warmest place, or the most agreeable food. If one

of them happens to be more fortunate in this respect than the rest, the strongest generally comes to dispossess it of its advantageous situation. Their manner of fighting, though terrible to them, is ridiculous enough to a spectator. One of them seizes the hair on the nape of the other's neck with its fore-teeth, and attempts to tear it away; the other, to retaliate, turns its hinder parts to the enemy, and kicks up behind like a horse, and with its hinder claws scratches the sides of its adversary; so that sometimes they cover each other with blood. When they contend in this manner, they gnash their teeth pretty loudly, and this is often a denunciation of mutual resentment.

These, though so formidable to each other, yet are the most timorous creatures upon earth, with respect to the rest of animated nature: a falling leaf disturbs them, and every animal overcomes them. From hence they are difficultly tamed; and will suffer none to approach them, except the person by whom they are fed. Their manner of eating is something like that of the rabbit; and, like it, they appear also to chew the cud. Although they seldom drink, they make water every minute. They grunt somewhat like a young pig; and have a more piercing note to express pain. In a word, they do no injury; but then, except the pleasure they afford the spectator, they are of very little benefit to mankind. Some, indeed, dress and eat them; but their flesh is indifferent food, and by no means a reward for the trouble of rearing them. This, perhaps, might be improved, by keeping them in a proper warren, and not suffering them to become domestic: however, the advantages that would result from this would be few, and the trouble great; so that it is likely they will continue an useless, inoffensive dependent, rather propagated to satisfy caprice than to supply necessity.

BOOK VI.

ANIMALS OF THE RAT, HEDGEHOG, ETC. KINDS.

CHAP. I.

THE RAT KIND.*

WERE it necessary to distinguish animals of the rat kind from all others, we might describe them as having two large cutting teeth, like the hare kind, in each jaw; as covered with hair; and as not ruminating. These distinctions might serve to guide us, had we not too near an acquaintance with this noxious race to be mistaken in their kind. Their numbers, their minuteness, their vicinity, their vast multiplication, all sufficiently contribute to press them upon our observation, and remind us of their existence. Indeed, if we look through the different ranks of animals, from the largest to the smallest, from the great elephant to the diminutive mouse, we shall find that we suffer greater injuries from the contemptible meanness of the one, than the formidable invasions of the other. Against the elephant, the rhinoceros, or the lion, we can oppose united strength; and by art make up the deficiencies of natural power: these we have driven into their native solitudes, and obliged to continue at a distance, in the most inconvenient regions and unhealthful climates. But it is otherwise with the little teasing race I am now describing: no force can be exerted against their unresisting timidity; no arts can diminish their amazing propagation: millions may be at once destroyed, and yet the breach be repaired in the space of a very few weeks; and, in proportion as nature has denied them force, it has supplied the defect by their fecundity.

* These have the upper front teeth wedge-shaped, three grinders on each side in each jaw, though sometimes only two, and have perfect collar bones. There are forty-six distinct species.

THE GREAT RAT.

THE animal best known at present, and in every respect the most mischievous, is the Great Rat; which, though but a new comer into this country, has taken too secure a possession to be ever removed. This hateful and rapacious creature, though sometimes called the *rat of Norway*, is utterly unknown in all the northern countries, and, by the best accounts I can learn, comes originally from the Levant. Its first arrival, as I am assured, was upon the coasts of Ireland, in those ships that traded in provisions to Gibraltar; and perhaps we owe to a single pair of these animals, the numerous progeny that now infests the whole extent of the British empire.

This animal, which is called by Mr. Buffon the *surmalot*, is in length about nine inches; its eyes are large and black; the colour of the head, and the whole upper part of the body, is of a light brown, mixed with a tawny and ash colour. The end of the nose, the throat, and belly, are of a dirty white, inclining to gray; the feet and legs are almost bare, and of a dirty pale flesh colour; the tail is as long as the body, covered with minute dusky scales mixed with a few hairs, and adds to the general deformity of its detestable figure. It is chiefly in the colour that this animal differs from the *black rat*, or the *common rat*, as it was once called; but now common no longer. This new invader, in a very few years after its arrival, found means to destroy almost the whole species, and to possess itself of their retreats.

But it was not against the black rat alone that its rapacity was directed; all other animals of inferior strength shared the same misfortunes. The contest with the black rat was of short continuance. As it was unable to contend, and had no holes to fly to for retreat, but where its voracious enemy could pursue, the whole race was soon extinguished. The frog also was an animal equally incapable of combat or defence. It had been designedly introduced into the kingdom of Ireland some years before the Norway rat; and it was seen to multiply amazingly. The inhabitants were pleased with the propagation of a harmless animal, that served to rid their fields of insects;

and even the prejudices of the people were in its favour, as they supposed that the frog contributed to render their waters more wholesome. But the Norway rat soon put a stop to their increase; as these animals were of an amphibious nature, they pursued the frog to its lakes, and took it even in its own natural element. I am, therefore, assured, that the frog is once more almost extinct in that kingdom; and that the Norway rat, having no more enemies left there to destroy, is grown less numerous also.

We are not likely, therefore, to gain by the destruction of our old domestics, since they are replaced by such mischievous successors. The Norway rat has the same disposition to injure us, with much greater power of mischief. It burrows in the banks of rivers, ponds, and ditches; and is every year known to do incredible damage to those mounds that are raised to conduct streams, or to prevent rivers from overflowing. In these holes, which it forms pretty near the edge of the water, it chiefly resides during the summer, where it lives upon small animals, fish, and corn. At the approach of winter, it comes nearer the farm-houses, burrows in their corn, eats much, and damages still more than it consumes. But nothing that can be eaten seems to escape its voracity. It destroys rabbits, poultry, and all kinds of game; and, like the pole-cat, kills much more than it can carry away. It swims with great ease, dives with great celerity, and easily thins the fish-pond. In short, scarcely any of the feebler animals escape its rapacity, except the mouse, which shelters itself in its little hole, where the Norway rat is too big to follow.

These animals frequently produce from ten to fifteen at a time;* and usually bring forth three times a year. This great increase would quickly be found to over-run the whole country, and render our assiduity to destroy them fruitless, were it not, happily for us, that they eat and destroy each other. The same insatiable appetite that impels them to indiscriminate carnage, also incites the strongest to devour the weakest, even of their own kind. The large male rat generally keeps in a hole by itself, and is as dreaded by its own species, as the most formidable

* Buffon, vol. xvii. p. 2.

enemy. In this manner the number of these vermin is kept within due bounds; and when their increase becomes injurious to us, it is repressed by their own rapacity.

But beside their own enmities among each other, all the stronger carnivorous quadrupeds have natural antipathies against them. The dog, though he detests their flesh, yet openly declares his alacrity to pursue them; and attacks them with great animosity. Such as are trained up to killing these vermin, dispatch them often with a single squeeze: but those dogs that shew any hesitation, are sure to come off but indifferently; for the rat always takes the advantage of a moment's delay, and, instead of waiting for the attack, becomes the aggressor, seizing its pursuer by the lip, and inflicting a very painful and dangerous wound. From the inflammation, and other angry symptoms that attend this animal's bite, some have been led to think that it was in some measure venomous; but it is likely that the difficulty of the wound's healing, arises merely from its being deep, and lacerated by the teeth, and is rather a consequence of the figure of the instruments that inflict it, than any venom they may be supposed to possess.

The cat is another formidable enemy of this kind; and yet the generality of our cats neither care to attack it, nor to feed upon it when killed. The cat is a more prudent hunter than the dog, and will not be at the pains to take or combat with an enemy that is not likely to repay her time and danger. Some cats, however, will pursue and take the rat; though often not without an obstinate resistance. If hungry, the cat will sometimes eat the head; but, in general, she is content merely with her victory.

A foe much more dangerous to these vermin is the weasel. This animal pursues them with avidity, and being pretty nearly of their own size, follows them into their holes, where a desperate combat ensues. The strength of each is pretty near equal; but the arms are very different. The rat, furnished with four long tusks at the extremity of its jaw, rather snaps than bites; but the weasel, where it once fastens, holds, and continuing also to suck the blood at the same time, weakens its antagonist, and always obtains the victory. Mankind have contrived several other methods of destroying these noxious intruders; ferrets, traps, and particularly poison; but of all other poisons, I am told that the nux

vomica, ground and mixed with meal, is the most certain, as it is the least dangerous.

To this species I will subjoin as a variety, the BLACK RAT, mentioned above, greatly resembling the former in figure, but very distinct in nature, as appears from their mutual antipathy. This animal was formerly as mischievous as it was common; but at present it is almost utterly extirpated by the great rat, one malady often expelling another. It is become so scarce, that I do not remember ever to have seen one. It is said to be possessed of all the voracious and unnatural appetites of the former: though, as it is less, they may probably be less noxious. Its length is about seven inches; and the tail is near eight inches long. The colour of the body is of a deep iron gray, bordering upon black, except the belly, which is of a dirty cinereous hue. They have propagated in America in great numbers, being originally introduced from Europe; and as they seem to keep their ground wherever they get footing, they are now become the most noxious animals in that part of the world.

To this also we may subjoin the BLACK WATER-RAT, about the same size with the latter, with a larger head, a blunter nose, less eyes, and shorter ears, and the tip of its tail a little white. It was supposed by Ray to be web-footed; but this has been found to be a mistake, its toes pretty much resembling those of its kind. It never frequents houses; but is usually found on the banks of rivers, ditches, and ponds, where it burrows and breeds. It feeds on fish, frogs, and insects; and in some countries it is eat on fasting days.*

THE MOUSE.

AN animal equally mischievous, and equally well known with the former, is the mouse. Timid, cautious, and active, all its dispositions are similar to those of the rat, except

* Dr. Shaw, in his general zoology, informs us, that a gentleman travelling through Mecklenburg about thirty years ago, was witness to the following curious circumstance in the post-house at New Stargard. After dinner the landlord placed on the floor a large dish of soup, and gave a loud whistle. Immediately then came into the room a mastiff, a fine Angora cat, an old raven, and a remarkably large rat with a bell about its neck. The four animals went to the dish, and, without disturbing each other, fed together; after which the dog, cat, and rat, lay before the fire, while the raven hopped about the room. The landlord,

with fewer powers of doing mischief.* Fearful by nature, but familiar from necessity, it attends upon mankind, and comes an unbidden guest to his most delicate entertainments. Fear and necessity seem to regulate all its motions; it never leaves its hole but to seek provision, and seldom ventures above a few paces from home. Different from the rat, it does not go from one house to another, unless it be forced; and as it is more easily satisfied, it does much less mischief.

Almost all animals are tamed more difficultly in proportion to the cowardice of their natures. The truly bold and courageous easily become familiar, but those that are always fearful are ever suspicious. The mouse being the most feeble, and consequently the most timid of all quadrupeds, except the Guinea-pig, is never rendered thoroughly familiar; and, even though fed in a cage, retains its natural apprehensions. In fact, it is to these alone that it owes its security.† No animal has more enemies, and few so incapable of resistance. The owl, the cat, the snake, the hawk, the weasel, the rat itself, destroy this species by millions, and it only subsists by its amazing fecundity.

The mouse brings forth at all seasons, and several times in a year. Its usual number is from six to ten. These in less than a fortnight are strong enough to run about and shift for themselves. They are chiefly found in farmers' yards, and among their corn, but are seldom in those ricks that are much infested with rats. They generally choose the south-west side of the rick, from whence most rain is expected; and from thence they often, of an evening, venture forth to drink the little drops either of rain or dew that hang at the extremities of the straw.‡ Aristotle gives us an idea of their prodigious fecundity, by assuring us, that having put a mouse with young into a vessel of corn, in some time after he found a hundred and twenty mice, all sprung from one original. The early growth of this animal implies also the short duration of its life, which seldom

after accounting for the familiarity which existed among the animals, informed his guest that the rat was the most useful of the four; for the noise he made had completely freed the house from the rats and mice with which it was before infested.

* Buffon, vol. xv. p. 145.

† E volucribus hirundines sunt indociles, e terrestibus mures. Plin

‡ Buffon, vol. xv. p. 147.

lasts above two or three years. This species is very much diffused, being found in almost all parts of the ancient continent, and having been exported to the new.* They are animals that, while they fear human society, closely attend it; and, although enemies to man, are never found but near those places where he has fixed his habitation. Numberless ways have been found for destroying them; and Gesner has minutely described the variety of traps by which they are taken. Our Society for the Encouragement of Arts and Manufactures proposed a reward for the most ingenious contrivance for that purpose; and I observed almost every candidate passing off descriptions as inventions of his own. I thought it was cruel to detect the plagiarism, or frustrate the humble ambition of those who would be thought the inventors of a mouse-trap.

To this species, merely to avoid teazing the reader with a minute description of animals very inconsiderable and very nearly alike, I will add that of the LONG-TAILED FIELD-MOUSE, which is larger than the former, of a colour very nearly resembling the Norway rat, and chiefly found in fields and gardens. They are extremely voracious, and hurtful in gardens and young nurseries, where they are killed in great numbers. However, their fecundity quickly repairs the destruction.

Nearly resembling the former, but larger, (for it is six inches long) is the SHORT-TAILED FIELD-MOUSE; which, as its name implies, has the tail much shorter than the former, it being not above an inch and a half long, and ending in a small tuft. Its colour is more inclining to that of the domestic mouse, the upper part being blackish, and the under of an ash-colour. This, as well as the former, are remarkable for laying up provision against winter; and Mr. Buffon assures us they sometimes have a store of above a bushel at a time.

We may add also the SHREW-MOUSE to this species of minute animals, being about the size of the domestic mouse, but differing greatly from it in the form of its nose, which is very long and slender. The teeth also are of a very singular form, and twenty-eight in number; whereas the common number in the rat kind is usually not above sixteen. The two upper fore-teeth are very sharp, and on each side

* Lisle's Husbandry, vol. ii. p. 391.

of them there is a kind of wing or beard, like that of an arrow, scarcely visible but on a close inspection. The other teeth are placed close together, being very small, and seeming scarcely separated; so that with respect to this part of its formation, the animal has some resemblance to the viper. However, it is a very harmless little creature, doing scarcely any injury. On the contrary, as it lives chiefly in the fields, and feeds more upon insects than corn, it may be considered rather as a friend than an enemy. It has a strong, disagreeable smell, so that the cat, when it is killed, will refuse to eat it. It is said to bring four or five young at a time.

THE DORMOUSE.

These animals may be distinguished into three kinds; the GREATER DORMOUSE, which Mr. Buffon calls the LOIR; the MIDDLE, which he calls the LEROT; the LESS, which he denominates the MUSCARDIN. They differ from each other in size, the largest being equal to a rat, the least being no bigger than a mouse. They all differ from the rat in having the tail tufted with hair, in the manner of a squirrel, except that the squirrel's tail is flat, resembling a fan; and theirs round, resembling a brush. The lerot differs from the loir by having two black spots near the eyes; the muscardin differs from both in the whitish colour of its hair on the back. They all three agree in having black sparkling eyes, and the whiskers partly white and partly black. They agree in their being stupified, like the marmout, during the winter, and in their hoarding up provisions to serve them in case of a temporary revival.

They inhabit the woods or very thick hedges, forming their nests in the hollow of some tree, or near the bottom of a close shrub, humbly content with continuing at the bottom, and never aspiring to sport among the branches. Towards the approach of the cold season, they form a little magazine of nuts, beans, or acorns; and having laid in their hoard, shut themselves up with it for the winter. As soon as they feel the first advances of the cold, they prepare to lessen its effect by rolling themselves up in a ball, and thus exposing the smallest surface to the weather. But it often happens that the warmth of a sunny day, or an accidental change from cold to heat, thaws their nearly stagnant fluids, and they

revive. On such occasions they have their provisions laid in, and they have not far to seek for their support. In this manner they continue usually asleep, but sometimes waking, for about five months in the year, seldom venturing from their retreats, and, consequently, but rarely seen. Their nests are lined with moss, grass, and dead leaves; they usually bring forth three or four young at a time, and that but once a year, in the spring.

THE MUSK RAT.

Of these animals of the rat kind, but with a musky smell, there are also three distinctions, as of the former; the ONDATRA, the DESMAN, and the PILORI. The ondatra is a native of Canada, the desman of Lapland, and the pilori of the West India islands. The ondatra differs from all others of its kind, in having the tail flatted and carried edge-ways. The desman has a long extended snout, like the shrew-mouse; and the pilori a short tail, as thick at one end as the other. They all resemble each other in being fond of the water, but particularly in that musky odour from whence they have taken their name.

Of these the ONDATRA is the most remarkable, and has been the most minutely described.* This animal is about the size of a small rabbit, but has the hair, the colour, and the tail of a rat, except that it is flatted on the sides, as mentioned above. But it is still more extraordinary upon other accounts, and different from all other animals whatever. It is so formed that it can contract and enlarge its body at pleasure. It has a muscle like that of horses, by which they move their hides, lying immediately under the skin, and that furnished with such a power of contraction, together with such an elasticity in the false ribs, that this animal can creep into a hole where others, seemingly much less, cannot follow. The female is remarkable also for two distinct apertures, one for urine, the other for propagation. The male is equally observable for a peculiarity of conformation; the musky smell is much stronger at one particular season of the year than any other; and the marks of the sex seem to appear and disappear in the same manner.

The ondatra in some measure resembles the beaver in its nature and disposition. They both live in society during

* Buffon, vol. xx. p. 4.

winter; they both form houses of two feet and a half wide, in which they reside several families together. In these they do not assemble to sleep as the marmout, but purely to shelter themselves from the rigour of the season. However, they do not lay up magazines of provision like the beaver; they only form a kind of covert-way to and round their dwelling, from whence they issue to procure water and roots, upon which they subsist. During winter their houses are covered under a depth of eight or ten feet of snow; so that they must lead out a cold, gloomy, and necessitous life, during its continuance. During summer they separate two by two, and feed upon the variety of roots and vegetables that the season offers. They then become extremely fat, and are much sought after, as well for their flesh as their skins, which are very valuable. They then also acquire a very strong scent of musk, so pleasing to an European, but which the savages of Canada cannot abide. What we admire as a perfume, they consider as a most abominable stench, and call one of their rivers, on the banks of which this animal is seen to burrow in numbers, by the name of the *stinking river*, as well as the rat itself, which is denominated by them the *stinkard*. This is a strange diversity among mankind; and, perhaps, may be ascribed to the different kinds of food among different nations. Such as chiefly feed upon rancid oils, and putrid flesh, will often mistake the nature of scents; and, having been long used to ill smells, will, by habit, consider them as perfumes. Be this as it will, although these nations of northern savages consider the musk rat as intolerably fœtid, they nevertheless regard it as very good eating; and, indeed, in this they imitate the epicures of Europe very exactly, whose taste seldom relishes a dish till the nose gives the strongest marks of disapprobation. As to the rest, this animal a good deal resembles the beaver in its habits and disposition; but, as its instincts are less powerful, and its economy less exact, I will reserve for the description of that animal a part of what may be applicable to this.

THE CRICETUS.

The Cricetus, or German Rat, which Mr. Buffon calls the *hamster*, greatly resembles the water-rat in its size, small eyes, and the shortness of its tail. It differs in colour, being rather browner, like the Norway rat, with the belly

and legs of a dirty yellow. But the marks by which it may be distinguished from all others are two pouches, like those of a baboon, on each side of its jaw, under the skin, into which it can cram a large quantity of provision. These bags are oblong, and of the size, when filled, of a large walnut. They open into the mouth, and fall back along the neck to the shoulder. Into these the animal can thrust the surplus of those fruits or grains it gathers in the fields, such as wheat, peas, or acorns. When the immediate calls of hunger are satisfied, it then falls to filling these; and thus loaded with two great bunches on each side of the jaw, it returns home to its hole to deposit the spoil as a store for the winter. The size, the fecundity, and the voraciousness of this animal, render it one of the greatest pests in the countries where it is found, and every method is made use of to destroy it.*

But although this animal is very noxious with respect to man, yet, considered with regard to those instincts which conduce to its own support and convenience, it deserves our admiration.† Its hole offers a very curious object for contemplation, and shews a degree of skill superior to the rest of the rat kind. It consists of a variety of apartments, fitted up for the different occasions of the little inhabitant. It is generally made on an inclining ground, and always has two entrances, one perpendicular, and the other oblique; though, if there be more than one in a family, there are as many perpendicular holes as there are individuals below. The perpendicular hole is usually that through which they go in and out: the oblique serves to give a thorough air to keep the retreat clean, and, in case one hole is stopped, to give an exit at this. Within about a foot of the perpendicular hole, the animal makes two more, where are deposited the family's provisions. These are much more spacious than the former, and are large in proportion to the quantity of the store. Beside these, there is still another apartment warmly lined with grass and straw, where the female brings forth her young; all these

* Among animals of this kind, which are furnished with pouches on each side the mouth, the most remarkable is the Canada rat. Its size is that of the Norway rat, though of a more lengthened form. Its colour is a pale grayish-brown, paler beneath. The pouches attached to the cheeks are of a very large size, shaped somewhat like an egg, reach to the ground, and have the appearance of a pair of inflated bladders.

† Buffon, vol. xxvi. p. 159.

communicate with each other, and all together take up a space of ten or twelve feet in diameter. These animals furnish their store-houses with dry corn, well cleaned; they also lay in corn in the ear, and beans and peas in the pod. These, when occasion requires, they afterwards separate, carrying out the pods and empty ears by their oblique passage. They usually begin to lay in at the latter end of August; and, as each magazine is filled, they carefully cover up the mouth with earth, and that so neatly that it is no easy matter to discover where the earth has been removed. The only means of finding out their retreats are, therefore, to observe the oblique entrance, which generally has a small quantity of earth before it; and this, though often several yards from their perpendicular retreat, leads those who are skilled in the search to make the discovery. Many German peasants are known to make a livelihood by finding out and bringing off their hoards, which, in a fruitful season, often furnish two bushels of good grain in each apartment.

Like most others of the rat kind, they produce twice or thrice a year, and bring five or six at a time. Some years they appear in alarming numbers, at other times they are not so plentiful. The moist seasons assist their propagation; and it often happens on such years that their devastations produce a famine all over the country. Happily, however, for mankind, these, like the rest of their kind, destroy each other; and of two that Mr. Buffon kept in a cage, male and female, the latter killed and devoured the former. As to the rest, their fur is considered as very valuable; the natives are invited by rewards to destroy them; and the weasel kind seconds the wishes of government with great success. Although they are usually found brown on the back and white on the belly, yet many of them are observed to be gray; which may probably arise from the difference of age.

THE LEMING.

Having considered various kinds of these noxious little animals that elude the indignation of mankind, and subsist by their number, not their strength, we come to a species more bold, more dangerous, and more numerous than any of the former. The leming, which is a native of Scandi-

navia, is often seen to pour down in myriads from the northern mountains, and, like a pestilence, destroy all the productions of the earth. It is described as being larger than a dormouse, with a bushy tail, though shorter. It is covered with thin hair of various colours. The extremity of the upper part of the head is black, as are likewise the neck and shoulders, but the rest of the body is reddish, intermixed with small black spots of various figures, as far as the tail, which is not above half an inch long. The eyes are little and black, the ears round and inclining towards the back, the legs before are short, and those behind longer, which gives it a great degree of swiftness. But what it is much more remarkable for than its figure, are, its amazing fecundity and extraordinary migrations.

In wet seasons, all of the rat kind are known to propagate more than in dry; but this species in particular is so assisted in multiplying by the moisture of the weather, that the inhabitants of Lapland sincerely believe that they drop from the clouds, and that the same magazines that furnish hail and snow pour the leming also upon them. In fact, after long rain, these animals set forward from their native mountains, and several millions in a troop deluge the whole plain with their numbers.* They move, for the most part, in a square, marching forward by night, and lying still by day. Thus, like an animated torrent, they are often seen more than a mile broad covering the ground, and that so thick that the hindmost touches its leader. It is in vain that the poor inhabitant resists or attempts to stop their progress, they still keep moving forward, and though thousands are destroyed, myriads are seen to succeed, and make their destruction impracticable. They generally move in lines, which are about three feet from each other, and exactly parallel. Their march is always directed from the north-west to the south-east, and regularly conducted from the beginning. Wherever their motions are turned, nothing can stop them; they go directly forward, impelled by some strange power; and, from the time they first set out, they never once think of retreating. If a lake or a river happens to interrupt their progress, they all together take the water and swim over it; a fire, a deep well, or a torrent, does not turn them out of their straight-lined direction; they boldly plunge into the flames, or leap

* Phil. Trans. vol. ii. p. 872.

down the well, and are sometimes seen climbing up on the other side. If they are interrupted by a boat across a river while they are swimming, they never attempt to swim round it, but mount directly up its sides; and the boatmen, who know how vain resistance in such a case would be, calmly suffer the living torrent to pass over, which it does without further damage. If they meet with a stack of hay or corn that interrupts their passage, instead of going over it, they gnaw their way through; if they are stopped by a house in their course, if they cannot get through it, they continue there till they die. It is happy, however, for mankind, that they eat nothing that is prepared for human subsistence; they never enter a house to destroy the provisions, but are contented with eating every root and vegetable that they meet. If they happen to pass through a meadow, they destroy it in a very short time, and give it an appearance of being burnt up and strewed with ashes. If they are interrupted in their course, and a man should imprudently venture to attack one of them, the little animal is no way intimidated by the disparity of strength, but furiously flies up at its opponent, and barking somewhat like a puppy, wherever it fastens does not easily quit the hold. If at last the leader be forced out of its line, which it defends as long as it can, and be separated from the rest of its kind, it sets up a plaintive cry, different from that of anger, and, as some pretend to say, gives itself a voluntary death, by hanging itself on the fork of a tree.

An enemy so numerous and destructive would quickly render the countries where they appear utterly uninhabitable, did it not fortunately happen, that the same rapacity that animates them to destroy the labours of mankind, at last impels them to destroy and devour each other.* After committing incredible devastations, they are at last seen to separate into two armies, opposed with deadly hatred, along the coast of the larger lakes and rivers. The Laplanders, who observe them thus drawn up to fight, instead of considering their mutual animosities as an happy riddance of the most dreadful pest, form ominous prognostics from the manner of their arrangement. They consider their combats as a presage of war, and expect an invasion from the Russians or the Swedes, as the sides next those kingdoms happen to conquer. The two divisions, however, continue their

* Dictionnaire Raisonnée vol. ii. p. 610.

engagements and animosity until one party overcomes the other. From that time they utterly disappear, nor is it well known what becomes of either the conquerors or the conquered. Some suppose that they rush headlong into the sea; others, that they kill themselves, as some are found hanging on the forked branches of a tree; and others still, that they are destroyed by the young spring herbage. But the most probable opinion is, that, having devoured the vegetable productions of the country, and having nothing more to subsist on, they then fall to devouring each other; and, having habituated themselves to that kind of food, continue it. However this be, they are often found dead by thousands, and their carcases have been known to infect the air for several miles round, so as to produce very malignant disorders. They seem also to infect the plants they have gnawed, for the cattle often die that afterwards feed in the places where they passed.

As to the rest, the male is larger and more beautifully spotted than the female. They are extremely prolific; and, what is extraordinary, their breeding does not hinder their march; for some of them have been observed to carry one young one in their mouth, and another on their back. They are greatly preyed upon by the ermine, and, as we are told, even by the rein-deer. The Swedes and Norwegians, who live by husbandry, consider an invasion from these vermin as a terrible visitation; but it is very different with respect to the Laplanders, who lead a vagrant life, and who, like the lemings themselves, if their provisions be destroyed in one part of the country, can easily retire to another. These are never so happy as when an army of lemings come down amongst them; for then they feast upon their flesh; which, though horrid food, and which though even dogs and cats are known to detest, these little savages esteem very good eating, and devour greedily. They are glad of their arrival also upon another account, for they always expect a great plenty of game the year following, among those fields which the lemings have destroyed.

THE MOLE.

To these minute animals of the rat kind, a great part of whose lives is past in holes under ground, I will subjoin one little animal more, no way resembling the rat, except that its whole life is spent there. As we have seen some

quadrupeds formed to crop the surface of the fields, and others to live upon the tops of trees, so the mole is formed to live wholly under the earth, as if nature meant that no place should be left wholly untenanted. Were we from our own sensations to pronounce upon the life of a quadruped that was never to appear above ground, but always condemned to hunt for its prey underneath, obliged, whenever it removed from one place to another, to bore its way through a resisting body, we should be apt to assert that such an existence must be the most frightful and solitary in nature. However, in the present animal, though we find it condemned to all those seeming inconveniences, we shall discover no signs of wretchedness or distress. No quadruped is fatter, none has a more sleek or glossy skin; and, though denied many advantages that most animals enjoy, it is more liberally possessed of others, which they have in a more scanty proportion.

This animal, so well known in England, is, however, utterly a stranger in other places, and particularly in Ireland. For such, therefore, as have never seen it, a short description will be necessary. And, in the first place, though somewhat of a size between the rat and the mouse, it no way resembles either, being an animal entirely of a singular kind, and perfectly unlike any other quadruped whatever. It is bigger than a mouse, with a coat of fine, short, glossy, black hair. Its nose is long and pointed, resembling that of a hog, but much longer. Its eyes are so small, that it is scarcely possible to discern them. Instead of ears, it has only holes in the place. Its neck is so short that the head seems stuck upon the shoulders. The body is thick and round, terminating by a very small short tail, and its legs also are so very short, that the animal seems to lie flat on its belly. From under its belly, as it rests in this position, the four feet appear just as if they immediately grew out of the body. Thus the animal appears to us at first view as a mass of flesh covered with a fine, shining, black skin, with a little head, and scarcely any legs, eyes, or tail. On a closer inspection, however, two little black points may be discerned, that are its eyes. The ancients, and some of the moderns, were of opinion that the animal was utterly blind; but Derham, by the help of a microscope, plainly discovered all the parts of the eye that are known in other animals, as the

pupil, the vitreous and crystalline humours. The fore-legs appear very short and strong, and furnished with five claws to each. These are turned outwards and backwards, as the hands of a man when swimming. The hind-legs are longer and weaker than the fore, being only used to assist its motions; whereas the others are continually employed in digging. The teeth are like those of a shrew-mouse, and there are five on both sides of the upper jaw, which stand out; but those behind are divided into points. The tongue is as large as the mouth will hold.

Such is the extraordinary figure and formation of this animal, which, if we compare with its manner of living, we shall find a manifest attention in nature to adapt the one to the other.* As it is allotted a subterraneous abode, the seeming defects of its formation vanish, or rather are turned to its advantage. The breadth, strength, and shortness of the fore-feet, which are inclined outwards, answer the purposes of digging, serving to throw back the earth with greater ease, and to pursue the worms and insects which are its prey: had they been longer, the falling in of the earth would have prevented the quick repetition of its strokes in working; or have obliged it to make a larger hole in order to give room for their exertion. The form of the body is not less admirably contrived for its way of life. The fore-part is thick, and very muscular, giving great strength to the action of the fore-feet, enabling it to dig its way with amazing force and rapidity either to pursue its prey, or elude the search of the most active enemy. By its power of boring the earth, it quickly gets below the surface; and I have seen it, when let loose in the midst of a field, like the ghost on a theatre, instantly sink into the earth; and the most active labourer, with a spade, in vain attempted to pursue.

The smallness of its eyes, which induced the ancients to think it was blind, is, to this animal, a peculiar advantage. A small degree of vision is sufficient for a creature that is ever destined to live in darkness. A more extensive sight would only have served to shew the horrors of its prison, while nature had denied it the means of an escape. Had this organ been larger, it would have been perpetually liable to injuries, by the falling of the earth into it; but nature, to

* British Zoology.

prevent that inconvenience, has not only made them very small, but very closely covered them with hair. Anatomists mention, besides these advantages, another that contributes to their security; namely, a certain muscle, by which the animal can draw back the eye whenever it is necessary or in danger.

As the eye is thus perfectly fitted to the animal's situation, so also are the senses of hearing and smelling. The first gives it notice of the most distant appearance of danger; the other directs it, in the midst of darkness, to its food. The wants of a subterraneous animal can be but few; and these are sufficient to supply them: to eat, and to produce its kind, are the whole employment of such a life; and for both these purposes it is wonderfully adapted by nature.*

Thus admirably is this animal fitted for a life of darkness and solitude; with no appetites but what it can easily indulge, with no enemies but what it can easily evade or conquer. As soon as it has once buried itself in the earth, it seldom stirs out unless forced by violent rains in summer; or, when in pursuit of its prey, it happens to come too near the surface, and thus gets into the open air, which may be considered as its unnatural element. In general, it chooses the looser, softer grounds, beneath which it can travel with greater ease; in such also it generally finds the greatest number of worms and insects, upon which it chiefly preys. It is observed to be most active, and to cast up most earth, immediately before rain; and, in winter, before a thaw: at those times the worms and insects begin to be in motion, and approach the surface, whither this industrious animal pursues them On the contrary, in very dry weather, the mole seldom or never forms any hillocks; for then it is obliged to penetrate deeper after its prey, which at such seasons retire far into the ground.

As the moles very seldom come above ground, they

* Testes habet maximos, parastatas amplissimas, novum corpus seminale ab his diversum ac separatum. Penem etiam facile omnium, ni fallor, animalium longissimum, ex quibus colligere est maximam præ reliquis omnibus animalibus voluptatem in coitu, hoc abjectum et vile animalculum percipere, ut habeant quod ipsi invideant qui in hoc supremas vitæ suæ delicias collocant: Ray's Synops. Quadrup. p. 239. Huic opinioni assentitur D. Buffon, attamen non mihi apparet magnitudinem partium talem voluptatem augere. Maribus enim salacissimis contrarium obtinet.

have but few enemies; and very readily evade the pursuit of animals stronger and swifter than themselves.* Their greatest calamity is an inundation; which, wherever it happens, they are seen in numbers attempting to save themselves by swimming, and using every effort to reach the higher grounds. The greatest part, however, perish, as well as their young, which remain in the holes behind. Were it not for such accidents, from their great fecundity they would become extremely troublesome; and, as it is, in some places, they are considered by the farmer as his greatest pest. They couple towards the approach of spring; and their young are found about the beginning of May. They generally have four or five at a time; and it is easy to distinguish among other mole-hills, that in which the female has brought forth her young. These are made with much greater art than the rest, and are usually larger. The female, in order to form this retreat, begins by erecting the earth into a tolerably spacious apartment, which is supported within by partitions, at proper distances, that prevent the roof from falling. All round this she works and beats the earth very firm, so as to make it capable of keeping out the rain, let it be never so violent. As the hillock, in which this apartment is thus formed, is raised above ground, the apartment itself is consequently above the level of the plain, and, therefore, less subject to accidental slight inundations. The place being thus fitted, she then procures grass and dry leaves as a bed for her young. There they lie secure from wet, and she continues to make their retreat equally so from danger; for all round this hill of her own raising, are holes running into the earth, that part from the middle apartment, like rays from a centre, and extend about fifteen feet in every direction; these resemble so many walks or chases, into which the animal makes her subterraneous excursions, and supplies her young with such roots or insects as she can provide: but they contribute still more to the general safety; for as the mole is very quick of hearing, the instant she perceives her little habitation attacked, she takes to her burrow, and unless the earth be dug away by several men at once, she and her young always make a good retreat.

* Buffon.

The mole is scarcely found, except in cultivated countries: the varieties are but few. That which is found in Virginia, resembles the common mole, except in colour, which is black, mixed with a deep purple. There are sometimes white moles, seen particularly in Poland, rather larger than the former. As their skin is so very soft and beautiful, it is odd that it has not been turned to any advantage. Agricola tells us, that he saw hats made from it, the finest and the most beautiful that could be imagined.

CHAP. II.

THE HEDGEHOG, OR PRICKLY KIND.

ANIMALS of the Hedgehog kind require but very little accuracy to distinguish them from all others. That hair which serves the generality of quadrupeds for warmth and ornament, is partly wanting in these; while its place is supplied by sharp spines or prickles, that serve for their defence. This general characteristic, therefore, makes a much more obvious distinction than any that can be taken from their teeth or their claws. Nature, by this extraordinary peculiarity, seems to have separated them in a very distinguished manner; so that, instead of classing the hedgehog among the moles, or the porcupine with the hare, as some have done, it is much more natural and obvious to place them, and others approaching them in this strange peculiarity, in a class by themselves: nor let it be supposed, that while I thus alter their arrangement, and separate them from animals with which they have been formerly combined, that I am destroying any secret affinities that exist in nature. It is natural, indeed, for readers to suppose, when they see two such opposite animals as the hare and the porcupine assembled together in the same group, that there must be some material reason, some secret connection, for thus joining animals so little resembling each other in appearance. But the reasons for this union were very slight, and merely arose from a similitude in the fore-teeth: no likeness in the internal conformation, no similitude in nature, in habitudes, or disposition; in short, nothing to fasten the link that combines them, but the similitude in the teeth: this, therefore, may be easily dispensed with; and, as was said, it will be

most proper to class them according to their most striking similitudes.

The hedgehog, with an appearance the most formidable, is yet one of the most harmless animals in the world: unable or unwilling to offend, all its precautions are only directed to its own security; and it is armed with a thousand points, to keep off the enemy, but not to invade him. While other creatures trust to their force, their cunning, or their swiftness, this animal, destitute of all, has but one expedient for safety; and from this alone it often finds protection. As soon as it perceives itself attacked, it withdraws all its vulnerable parts, rolls itself into a ball, and presents nothing but its defensive thorns to the enemy; thus, while it attempts to injure no other quadruped, they are equally incapable of injuring it: like those knights, we have somewhere read of, who were armed in such a manner, that they could neither conquer others, nor be themselves overcome.

This animal is of two kinds; one with a nose like the snout of a hog; the other more short and blunt, like that of a dog. That with the muzzle of a dog is the most common, being about six inches in length, from the tip of the nose to the insertion of the tail. The tail is little more than an inch long, and so concealed by the spines, as to be scarcely visible: the head, back, and sides, are covered with prickles: the nose, breast, and belly, are covered with fine soft hair:* the legs are short, of a dusky colour, and almost bare: the toes on each foot are five in number, long and separated: the prickles are about an inch in length, and very sharp pointed; their lower part is white, the middle black, and the points white: the eyes are small, and placed high in the head: the ears are round, pretty large, and naked: the mouth is small, but well furnished with teeth; these, however, it only uses in chewing its food, but neither in attacking or defending itself against other animals. Its only reliance, in cases of danger, is on its spines; the instant it perceives an enemy, it puts itself into a posture of defence, and keeps upon its guard until it supposes the danger over. On such occasions, it immediately alters its whole appearance: from its usual form,

* Præputium propendens. Linnæi Syst. 75. And of the female he might have said, resupina copulatur.

somewhat resembling a small animal, with a bunch on its back, the animal begins to bend its back, to lay its head upon its breast, to shut its eyes, to roll down the skin of its sides towards the legs, to draw these up, and lastly, to tuck them in on every side, by drawing the skin still closer. In this form, which the hedgehog always puts on when disturbed, it no way resembles an animal, but rather a roundish mass of prickles, impervious on every side. The shape of the animal thus rolled up, somewhat resembles a chestnut in the husk; there being, on one side, a kind of flat space, which is that on which the head and legs have been tucked in.

Such is the usual appearance of the hedgehog, upon the approach of any danger. Thus rolled up in a lump, it patiently waits till its enemy passes by, or is fatigued with fruitless attempts to annoy it. The cat, the weasel, the ferret, and the martin, quickly decline the combat; and the dog himself generally spends his time in empty menaces, rather than in effectual efforts. Every increase of danger only increases the animal's precautions to keep on its guard; its assailant vainly attempts to bite, since he thus more frequently feels than inflicts a wound; he stands enraged and barking, and rolls it along with his paws: still, however, the hedgehog patiently submits to every indignity, but continues secure; and still more to disgust its enemy with the contest, sheds its urine, the smell of which is alone sufficient to send him away. In this manner the dog, after barking for some time, leaves the hedgehog where he found him, who, perceiving the danger past, at length peeps out from its ball, and, if not interrupted, creeps slowly to its retreat.

The hedgehog, like most other wild animals, sleeps by day, and ventures out by night. It generally resides in small thickets, in hedges, or in ditches covered with bushes: there it makes a hole of about six or eight inches deep, and lies well wrapped up, in moss, grass, or leaves. Its food is roots, fruits, worms, and insects. It is also said to suck cattle, and hurt their udders; but the smallness of its mouth will serve to clear it from this reproach. It is said also to be very hurtful in gardens and orchards, where it will roll itself in a heap of fruit, and so carry a large quantity away upon its prickles; but this imputation is as

ill grounded as the former, since the spines are so disposed, that no fruit will stick upon them, even if we should try to fix them on. It rather appears to be a very serviceable animal, in ridding our fields of insects and worms, which are so prejudicial to vegetation.

Mr. Buffon, who kept these animals tame about his house, acquits them of the reproach of being mischievous in the garden; but then he accuses them of tricks, of which, from the form and habits of this animal, one would never be led to suspect them. "I have often," says he, "had the female and her young brought me about the beginning of June: they are generally from three to five in number: they are white in the beginning, and only the marks of their spines appear: I was willing to rear some of them, and accordingly put the dam and her young into a tub, with abundant provision beside them; but the old animal, instead of suckling her young, devoured them all, one after another. On another occasion, an hedgehog that had made its way into the kitchen, discovered a little pot, in which there was meat prepared for boiling; the mischievous animal drew out the meat, and left its excrements in the stead. I kept males and females in the same apartment, where they lived together, but never coupled. I permitted several of them to go about my garden; they did very little damage, and it was scarcely perceivable that they were there: they lived upon the fruits that fell from the trees; they dug the earth into shallow holes; they eat caterpillars, beetles, and worms; they were also very fond of flesh, which they devoured boiled or raw."

They couple in spring, and bring forth about the beginning of summer. They sleep during the winter, and what is said of their laying up provisions for that season, is consequently false. They at no time eat much, and can remain very long without any food whatsoever. Their blood is cold, like all other animals that sleep during the winter. Their flesh is not good for food; and their skins are converted to scarcely any use, except to muzzle calves, to keep them from sucking.

THE TANREC AND TENDRAC.

The Tanrec and Tendrac, are two little animals, described by Mr. Buffon, of the hedgehog kind; but yet sufficiently

different from it to constitute a different species. Like the hedgehog, they are covered with prickles, though mixed in a greater proportion with hair; but, unlike that animal, they do not defend themselves by rolling up in a ball. Their wanting this last property is alone sufficient to distinguish them from an animal in which it makes the most striking peculiarity: as also that in the East Indies, where only they are found, the hedgehog exists separately also; a manifest proof that this animal is not a variety caused by the climate.

The Tanrec is much less than the hedgehog,* being about the size of a mole, and covered with prickles, like that animal, except that they are shorter and smaller. The Tendrac is still less than the former, and is defended only with prickles upon the head, the neck, and the shoulders; the rest being covered with a coarse hair, resembling a hog's bristles. These little animals, whose legs are very short, move but slowly. They grunt like a hog; and wallow, like it, in the mire. They love to be near water, and spend more of their time there than upon land. They are chiefly in creeks and harbours of salt water. They multiply in great numbers, make themselves holes in the ground, and sleep for several months. During this torpid state, their hairs (and I should also suppose their prickles) fall; and they are renewed upon their revival. They are usually very fat; and although their flesh be insipid, soft, and stringy, yet the Indians find it to their taste, and consider it as a very great delicacy.

THE PORCUPINE.

Those arms which the hedgehog possesses in miniature, the Porcupine has in a more enlarged degree. The short prickles of the hedgehog are, in this animal, converted into shafts. In the one, the spines are about an inch long; in the other, a foot. The porcupine is about two feet long, and fifteen inches high. Like the hedgehog, it appears a mass of misshapen flesh, covered with quills, from ten to fourteen inches long, resembling the barrel of a goose-quill in thickness, but tapering and sharp at both ends. These, whether considered separately or together, afford sufficient subject to detain curiosity. Each quill is thickest in the

* Buffon, vol. xxv. p. 254.

middle; and inserted into the animal's skin, in the same manner as feathers are found to grow upon birds. It is within-side spongy, like the top of a goose-quill; and of different colours, being white and black alternately, from one end to the other. The biggest are often found fifteen inches long, and a quarter of an inch in diameter; extremely sharp, and capable of inflicting a mortal wound. They seem harder than common quills, being difficult to be cut, and solid at that end which is not fixed in the skin. If we examine them in common, as they grow upon the animal, they appear of two kinds, the one such as I have already described; the other, long, flexible, and slender, growing here and there among the former. There is still another sort of quills, that grow near the tail, white and transparent, like writing quills, and that seem to be cut short at the end. All these quills, of whatever kind, incline backwards, like the bristles of a hog; but when the animal is irritated, they rise, and stand upright, as bristles are seen to do.*

Such is the formation of this quadruped, in those parts in which it differs from most others: as to the rest of its figure, the muzzle bears some resemblance to that of a hare, but black; the legs are very short, and the feet have five toes, both before and behind; and these, as well as the belly, the head, and all other parts of the body, are covered with a sort of short hair, like prickles, there being no part, except the ears and the sole of the foot, that is free from them: the ears are thinly covered with very fine hair; and are in shape like those of mankind: the eyes are small like those of a hog, being only one-third of an inch from one corner to the other. After the skin is taken off, there appear a kind of paps on those parts of the body from whence the large quills proceed; these are about the size of a small pea, each answering to as many holes which appear on the outward surface of the skin, and which are about half an inch deep, like as many hollow pipes, wherein the quills are fixed, as in so many sheaths.

* Professor Thunberg, in his second journey to the island Mature in the Indian ocean, informs us, that the porcupine has a very curious method of fetching water for its young. The quills in the tail are said to be hollow, and to have a hole at the extremity: these the animal can bend in such a manner, as that they can be filled with water, which is afterwards discharged in the nest among its young.

This animal seems to partake very much of the nature of the hedgehog; having this formidable apparatus of arms rather to defend itself, than annoy the enemy. There have been, indeed, many naturalists who supposed that it was capable of discharging them at its foes, and killing at a great distance off. But this opinion has been entirely discredited of late; and it is now universally believed that its quills remain firmly fixed in the skin, and are then only shed when the animal moults them, as birds do their feathers. It is true, we are told by Ellis, that a wolf at Hudson's Bay was found dead, with the quills of a porcupine fixed within its mouth; which might have very well happened, from the voraciousness of the former, and not the resentment of the latter. That rapacious creature, in the rage of appetite, might have attempted to devour the porcupine, quills and all, and very probably paid the forfeit by its life. However this be, of all the porcupines that have been brought into Europe, not one was ever seen to launch their quills; and yet the irritations they received were sufficient to have provoked their utmost indignation. Of all the porcupines that Dr. Shaw observed in Africa, and he saw numbers, not one ever attempted to dart its quills; their usual manner of defence being, to lie on one side, and when the enemy approaches very near, by suddenly rising, to wound him with the points on the other.*

It is probable, therefore, that the porcupine is seldom the aggressor; and when attacked by the bolder animals, it only directs its quills so as to keep always pointing towards the enemy. These are an ample protection; and, as we are assured by Kolben, at such times even the lion himself will not venture to make an attack. From such, therefore, the porcupine can defend itself; and chiefly hunts for serpents, and all other reptiles, for subsistence. Travellers universally assure us, that between the serpent and the porcupine there exists an irreconcileable enmity, and that they never meet without a mortal engagement.† The porcupine, on these occasions, is said to roll itself upon the serpent, and thus destroy and devour it. This

* M. de Vaillant in his Travels says, that owing to some pernicious quality in the quills, one of his Hottentots, who had received a wound in his leg from a porcupine, was ill for more than six months.

† Bosman. Smith. L. P. Vincent Marie, &c.

may be true; while, what we are informed by Monsieur Sarrasin, of the porcupine of Canada chiefly subsisting on vegetables, may be equally so. Those which are brought to this country to be shown, are usually fed on bread, milk, and fruits; but they will not refuse meat when it is offered them; and it is probable they prefer it in a wild state, when it is to be had.* The porcupine is also known to be extremely hurtful to gardens; and, where it enters, does incredible damage.

The Americans, who hunt this animal, assure us, that the porcupine lives from twelve to fifteen years. During the time of coupling, which is in the month of September, the males become very fierce and dangerous, and often are seen to destroy each other with their teeth. The female goes with young seven months, and brings forth but one at a time; this she suckles but about a month, and accustoms it betimes to live, like herself, upon vegetables and the bark of trees: she is very fierce in its defence; but, at other seasons, she is fearful, timid, and harmless. The porcupine never attempts to bite, nor any way to injure its pursuers: if hunted by a dog or a wolf, it instantly climbs up a tree, and continues there until it has wearied out the patience of its adversary; the wolf knows, by experience, how fruitless it would be to wait; he therefore leaves the porcupine above, and seeks out for a new adventure. The porcupine does not escape so well from the Indian hunter, who eagerly pursues it, in order to make embroidery of its quills, and to eat its flesh. This, as we are commonly told, is very tolerable eating: however, we may expect wretched provisions when the savages are to be our caterers, for they eat every thing that has life. But they are very ingenious with regard to their embroidery: if I understand the accounts rightly, they dye the quills of various colours, and then splitting them into slips, as we see in the making of a cane chair, they embroider with these their belts, baskets, and several other necessary pieces of furniture.

As to the rest, there are many things related concerning this animal that are fabulous; but there are still many circumstances more, that yet remain to be known. It were curious to inquire whether this animal moults its quills

* Buffon

when wild, for it is never seen to shed them in a domestic state; whether it sleeps all the winter, as we are told by some naturalists, which we are sure it does not when brought into our country; and, lastly, whether its quills can be sent off with a shake; for no less a naturalist than Reaumer was of that opinion.*

All that we can learn of an animal exposed as a show, or even by its dissection, is but merely its conformation; and that makes one of the least interesting parts of its history. We are naturally led, when presented with an extraordinary creature, to expect something extraordinary in its way of living, something uncommon, and corresponding with its figure; but of this animal we know little with any precision, except what it offers in a state of captivity. In such a situation, that which I saw appeared to very little advantage: it was extremely dull and torpid, though very wakeful and extremely voracious, though very capable of sustaining hunger; as averse to any attachment, as to being tamed: it was kept in an iron cage, and the touching one of the bars was sufficient to excite its resentment, for its quills were instantly erected, and the poet was right in his epithet of *fretful*; for it appeared to me the most irascible creature upon earth.

The porcupines of America differ very much from that of the ancient continent, which we have been describing; and, strictly speaking, may be considered as animals of a different species: however, from their being covered with quills, we will only add them as varieties of the former, since we know very little concerning them, except their difference of figure. They are of two kinds; the one called the *couando*; and the other, first named by Mr. Buffon, the *urson*; the one a native of the northern parts of America; the other of the south; and both differing from the former, in having long tails, whereas that has a very short one.

* Mr. Bewick, in his history of this quadruped, says, that upon the smallest irritation it raises its quills, and shakes them with great violence, directing them to that quarter from whence it is in danger of being attacked, and striking at the object of its resentment at the same time. "We have observed, on an occasion of this sort, at a time when the animal was moulting or casting its quills, that they would fly out to the distance of a few yards, with such force as to bend the points of them against the board where they struck; and it is not improbable that a circumstance of this kind may have given rise to an opinion of its power to use them in a more effectual manner."

The COUANDO is much less than the porcupine; its quills are four times shorter, its snout more unlike that of a hare; its tail is long enough to catch by the branches of trees, and hold by them. It may be easily tamed, and it is to be found chiefly in the southern parts of America; yet is not wanting also in the northern.

The URSON, which Mr. Buffon calls after our countryman Hudson, is a native of Hudson's Bay. The make of the body of this animal is not so round as that of the two former, but somewhat resembling the shape of a pig. It is covered with long bristly hair, with a shorter hair underneath; and under this the quills lie concealed very thick; they are white, with a brown point, and bearded, and the longest do not exceed four inches; they stick to the hand when the animal is stroked on the back; and likewise, when the hand is taken away, they stick so fast as to follow it. They make their nest under the roots of great trees, sleep very much, and chiefly feed upon the bark of the juniper. In winter the snow serves them for drink; and in summer they lap water like a dog. They are very common in the country lying to the east of Hudson's Bay; and several of the trading Americans depend on them for food, at some seasons of the year.

CHAP. III.

OF QUADRUPEDS COVERED WITH SCALES OR SHELLS INSTEAD OF HAIR.*

WHEN we talk of a quadruped, the name seems to imply an animal covered with hair; when we mention a bird, it is natural to conceive a creature covered with feathers; when we hear of a fish, its scales are generally the first part that strikes our imagination. Nature, however, owns none of our distinctions; various in all her operations, she mixes her plans, groups her pictures, and excites our wonder, as well by her general laws as by her deviations. Quadrupeds, which we have considered as making the first general class in animated nature, and, next to man, the most dignified tenants of the earth, are yet, in many respects, related to the classes beneath them, and do not in every respect,

* This chapter is chiefly extracted from Mr. Buffon, which I mention at once, to save the trouble of repeated quotation.

preserve their usual distinctions. Their first character, which consists in having four feet, is common to the lizard kind as well as to them. The second prerogative, which is that of bringing forth living young, is found in the cetaceous tribe of fishes, and also in insects without number. Their third and last attribute, which seems more general and constant than the former, that of being covered with hair, is yet found in various other animals, and is deficient in quadrupeds themselves. Thus we must be cautious of judging of the nature of animals from one single character, which is always found incomplete; for it often happens that three or four of the most general characters will not suffice. It must be by a general enumeration of the parts that we can determine precisely of the works of the creation; and instead of definitions, learn to describe. Had this method been followed, much of the disgust and the intricacy of history might have been avoided, and that time, which is now employed in combating error, laid out in the promoting of science.

Were we to judge of nature from definitions only, we should never be induced to suppose that there existed races of viviparous quadrupeds destitute of hair, and furnished with scales and shells in their stead. However, nature, every way various, supplies us with many instances of these extraordinary creatures; the old world has its quadrupeds covered with scales, and the new with a shell. In both, they resemble each other, as well in the strangeness of their appetites, as in their awkward conformation. Like animals but partially made up, and partaking of different natures, they want those instincts which animals, formed but for one element alone, are found to possess. They seem to be a kind of strangers in nature; creatures taken from some other element, and capriciously thrown to find a precarious subsistence upon land.

THE PANGOLIN.

THE Pangolin, which has been usually called the *scaly lizard*, Mr. Buffon very judiciously restores to that denomination by which it is known in the countries where it is found. The calling it a lizard, he justly observes, might be apt to produce error, and occasion its being confounded with an animal which it resembles only in its general form

and in its being covered with scales. The lizard may be considered as a reptile, produced from an egg; the pangolin is a quadruped, and brought forth alive, and perfectly formed. The lizard is all over covered with the marks of scales; the pangolin has scales neither on the throat, the breast, nor the belly. The scales of the lizard seem stuck upon the body even closer than those of fishes; the scales of the pangolin are only fixed at one end, and capable of being erected, like those of the porcupine, at the will of the animal. The lizard is a defenceless creature; the pangolin, can roll itself into a ball, like the hedgehog, and present the points of its scales to the enemy, which effectually defend it.

The pangolin, which is a native of the torrid climates of the ancient continent, is, of all other animals, the best protected from external injury by nature. It is about three or four feet long; or taking in the tail, from six to eight. Like the lizard, it has a small head, a very long nose, a short thick neck, a long body, legs very short, and a tail extremely long, thick at the insertion, and terminating in a point. It has no teeth, but is armed with five toes on each foot, with long white claws. But what it is chiefly distinguished by, is its scaly covering, which, in some measure, hides all the proportions of its body. These scales defend the animal on all parts, except the under part of the head and neck, under the shoulders, the breast, the belly, and the inner side of the legs; all which parts are covered with a smooth, soft skin, without hair. Between the shells of this animal, at all the interstices, are seen hairs like bristles, brown at the extremity, and yellow towards the root. The scales of this extraordinary creature are of different sizes and different forms, and stuck upon the body somewhat like the leaves of an artichoke. The largest are found near the tail, which is covered with them like the rest of the body. These are above three inches broad, and about two inches long, thick in the middle and sharp at the edges, and terminated in a roundish point. They are extremely hard, and their substance resembles that of horn. They are convex on the outside, and a little concave on the inner; one edge sticks in the skin, while the other laps over that immediately behind it. Those that cover the tail, conform to the shape of that part, being of a dusky brown colour,

and so hard, when the animal has acquired its full growth, as to turn a musket-ball.

Thus armed, this animal fears nothing from the efforts of all other creatures, except man. The instant it perceives the approach of an enemy, it rolls itself up like the hedgehog, and presents no part but the cutting edges of its scales to the assailant. Its long tail, which, at first view, might be thought easily separable, serves still more to increase the animal's security. This is lapped round the rest of the body, and, being defended with shells even more cutting than any other part, the creature continues in perfect security Its shells are so large, so thick, and so pointed, that they repel every animal of prey; they make a coat of armour that wounds while it resists, and at once protects and threatens. The most cruel, the most famished quadruped of the forest, the tiger, the panther, and the hyæna, make vain attempts to force it. They tread upon, they roll it about, but all to no purpose; the pangolin remains safe within, while its invader almost always feels the reward of its rashness. The fox often destroys the hedgehog by pressing it with his weight, and thus obliges it to put forth its nose, which he instantly seizes, and soon after the whole body; but the scales of the pangolin effectually support it under any such weight, while nothing that the strongest animals are capable of doing can compel it to surrender. Man alone seems furnished with arms to conquer its obstinacy. The negroes of Africa, when they find it beat it to death with clubs, and consider its flesh as a very great delicacy.

But although this animal be so formidable in its appearance, there cannot be a more harmless inoffensive creature when unmolested. It is even unqualified by nature to injure larger animals, if it had the disposition, for it has no teeth. It should seem that the bony matter, which goes in other animals to supply the teeth, is exhausted in this in supplying the scales that go to the covering of its body. However this be, its life seems corespondent to its peculiar conformation. Incapable of being carnivorous, since it has no teeth, nor of subsisting on vegetables, which require much chewing, it lives entirely upon insects, for which nature has fitted it in a very extraordinary manner. As it has a long nose, so it may naturally be supposed to have a long tongue; but, to increase its length still more, it is doubled in the

mouth, so that when extended it is shot out to above a quarter of a yard beyond the tip of the nose. This tongue is round, extremely red, and covered with an unctuous and slimy liquor, which gives it a shining hue. When the pangolin, therefore, approaches an ant-hill, for these are the insects on which it chiefly feeds, it lies down near it, concealing as much as possible the place of its retreat, and stretching out its long tongue among the ants, keeps it for some time quite immovable. These little animals, allured by its appearance, and the unctuous substance with which it is smeared, instantly gather upon it in great numbers; and when the pangolin supposes a sufficiency, it quickly withdraws the tongue, and swallows them at once. This peculiar manner of hunting for its prey is repeated, either till it be satisfied, or till the ants, grown more cautious, will be allured to their destruction no longer. It is against these noxious insects, therefore, that its only force or cunning is exerted; and were the negroes but sufficiently sensible of its utility in destroying one of the greatest pests to their country, they would not be so eager to kill it. But it is the nature of savage men to pursue the immediate good, without being solicitous about the more distant benefit they remove. They, therefore, hunt this animal with the utmost avidity for its flesh; and as it is slow, and unable to escape in an open place, they seldom fail of destroying it. However, it chiefly keeps in the most obscure parts of the forest, and digs itself a retreat in the clefts of rocks, where it brings forth its young, so that it is but rarely met with, and continues a solitary species, and an extraordinary instance of the varying of nature.

Of this animal, there is a variety which is called the PHATAGIN, much less than the former, being not above a foot long from the head to the tail, with shells differently formed, with its belly, breast, and throat covered with hair, instead of a smooth skin, as in the former; but that by which it is peculiarly distinguished, is the extent of its tail, which is above twice the length of its body. Both are found in the warm latitudes of the East, as well as in Africa; and, as their numbers are but few, it is to be supposed their fecundity is not great.

THE ARMADILLO, OR TATOU.

HAVING mentioned quadrupeds of the ancient continent covered with scales, we come next to quadrupeds of the new continent covered with shells. It would seem that Nature had reserved all the wonders of her power for these remote and thinly inhabited countries, where the men are savage, and the quadrupeds various. It would seem that she becomes more extraordinary in proportion as she retires from human inspection. But the real fact is, that wherever mankind are polished, or thickly planted, they soon rid the earth of these odd and half-formed productions, that in some measure encumber the soil. They soon disappear in a cultivated country, and continue to exist only in those remote deserts where they have no enemies but such as they are enabled to oppose.

The Armadillo is chiefly an inhabitant of South America; a peaceful, harmless creature, incapable of offending any other quadruped, and furnished with a peculiar covering for its own defence. The pangolin, described above, seems an inactive, helpless being, indebted for safety more to its patience than its power; but the armadillo is still more exposed and helpless. The pangolin is furnished with an armour that wounds while it resists, and that is never attacked with impunity; but the armadillo is obliged to submit to every insult, without any power of repelling its enemy; it is attacked without danger, and is consequently liable to more various persecutions.

This animal being covered, like a tortoise, with a shell, or rather a number of shells, its other proportions are not easily discerned. It appears, at first view, a round misshapen mass, with a long head, and a very large tail sticking out at either end, as if not of a piece with the rest of the body. It is of different sizes, from a foot to three feet long, and covered with a shell divided into several pieces, that lap over each other like the plaits in a coat of armour, or in the tail of a lobster. The difference in the size of this animal, and also the different disposition and number of its plaits, have been considered as constituting so many species, each marked with its own particuliar name. In all, however, the animal is partially covered with this natural

coat of mail; the conformation of which affords one of the most striking curiosities in natural history. This shell, which in every respect resembles a bony substance, covers the head, the neck, the back, the sides, the rump, and the tail to the very point. The only parts to which it does not extend, are the throat, the breast, and the belly, which are covered with a white soft skin, somewhat resembling that of a fowl stripped of its feathers. If these naked parts be observed with attention, they will be found covered with the rudiments of shells, of the same substance with those which cover the back. The skin, even in the parts which are softest, seems to have a tendency to ossify; but a complete ossification takes place only on those parts which have the least friction, and are the most exposed to the weather. The shell, which covers the upper part of the body, differs from that of the tortoise, in being composed of more pieces than one, which lie in bands over the body, and, as in the tail of the lobster, slide over each other, and are connected by a yellow membrane in the same manner. By this means the animal has a motion in its back, and the armour gives way to its necessary inflexions. These bands are of various numbers and sizes, and from them these animals have been distinguished into various kinds. In general, however, there are two large pieces that cover, one the shoulders, and the other the rump. In the back, between these, the bands are placed in different numbers, that lap over each other, and give play to the whole. Besides their opening cross-ways, they also open down along the back, so that the animal can move in every direction. In some there are but three of these bands between the large pieces; in others there are six; in a third kind there are eight; in a fourth kind, nine; in a fifth kind, twelve; and, lastly, in the sixth kind there is but one large piece, which covers the shoulders, and the rest of the body is covered with bands all down to the tail. These shells are differently coloured in different kinds, but most usually they are of a dirty grey. This colour, in all, arises from another peculiar circumstance in their conformation, for the shell itself is covered with a softish skin, which is smooth and transparent.

But, although these shells might easily defend this animal from a feeble enemy, yet they could make but a slight

resistance against a more powerful antagonist; nature, therefore, has given the armadillo the same method of protecting itself with the hedgehog or the pangolin. The instant it perceives itself attacked, it withdraws the head under its shells, and lets nothing be seen but the tip of the nose: if the danger increases, the animal's precautions increase in proportion; it then tucks up its feet under its belly, unites its two extremities together, while the tail seems as a band to strengthen the connection; and it thus becomes like a ball, a little flattish on each side. In this position it continues obstinately fixed, while the danger is near, and often long after it is over. In this situation it is tossed about at the pleasure of every other quadruped, and very little resembling a creature endowed with life and motion. Whenever the Indians take it, which is in this form, by laying it close to the fire, they soon oblige the poor animal to unfold itself, and to face a milder death to escape a more severe.

This animal is a native only of America, for they were utterly unknown before the discovery of that continent. It is an inoffensive harmless creature, unless it finds the way into a garden, where it does a great deal of mischief, by eating the melons, the potatoes, and other vegetables. Although a native of the warmest parts of America, yet it bears the cold of our climate without any inconvenience. We have often seen them shewn among other wild beasts, which is a proof they are not difficult to be brought over. Their motion seems to be a swift walk, but they can neither run, leap, nor climb trees; so that, if found in an open place, they have no method of escaping from their pursuers. Their only resource in such an extremity is to make towards their hole as fast as they can; or, if this be impracticable, to make a new hole before the enemy arrives. For this they require but a very few moments advantage; the mole itself does not burrow swifter than they can. For this purpose, they are furnished with claws extremely large, strong, and crooked, and usually four upon each foot. They are sometimes caught by the tail as they are making their way into the earth; but such is their resistance, and so difficult is it to draw them backward, that they leave their tail in the hand of their pursuer, and are very well contented to save their lives with its loss. The pursuers, sensible of this,

never drag the tail with all their force, but hold it while another digs the ground about them, and thus these animals are taken alive. The instant the armadillo perceives itself in the power of its enemies, it has but one last resource, to roll itself up, and thus patiently wait whatever tortures they think proper to inflict. The flesh of the smaller kinds is said to be delicate eating; so that we may suppose they receive no mercy. For this reason they are pursued with unceasing industry; and, although they burrow very deep in the earth, there have been many expedients used to force them out. The hunter sometimes contrive to fill the hole with smoke, which is often successful; they at other times force it by pouring in water. They also bring up a small kind of dogs to the chase, that quickly overtake them, if at any distance from their burrow, and oblige them to roll themselves up in a ball, in which figure the hunters carry them home. If, however, the armadillo be near a precipice, it often escapes by rolling itself up, and then tumbling down from rock to rock, without the least danger or inconvenience. They are sometimes taken in snares laid for them by the sides of rivers and low moist places, which they particularly frequent; and this method, in general, succeeds better than any of the former, as their burrows are very deep, and they seldom stir out except in the night. At no time are they found at any great distance from their retreats, so that it requires some patience and skill to intercept their retreat.

There are scarcely any of these that do not root the ground, like a hog, in search of such roots as make a principal part of their food. They live also upon melons and other succulent vegetables, and all will eat flesh when they can get it. They frequent water and watery places, where they feed upon worms, small fish, and water insects. It is pretended that there is a kind of friendship between them and the rattle-snake, that they live peaceably and commodiously together, and are frequently found in the same hole. This, however, may be a friendship of necessity to the armadillo: the rattle-snake takes possession of its retreats, which neither are willing to quit, while each is incapable of injuring the other.

As to the rest, these animals, though they all resemble each other in the general character of being clothed with

a shell, yet differ a good deal in their size, and in the parts into which their shell is divided. The first of this kind, which has but three bands between the two large pieces that cover the back, is called the TATU APARA. I will not enter into an exact description of its figure, which, how well written soever, no imagination could exactly conceive; and the reader would be more fatigued to understand than I to write it. The tail is shorter in this than any other kind, being not more than two inches long, while the shell, taking all the pieces together, is a foot long and eight inches broad. The second is the TATOU of Ray, or the ENCOUBERT of Buffon; this is distinguished from the rest by six bands across the back; it is about the size of a pig of a month old, with a small long head and a very long tail. The third is the TATUETTE, furnished with eight bands, and not by a great deal so big as the former. Its tail is longer also, and its legs shorter in proportion. Its body, from the nose to the insertion of the tail, is about ten inches long, and the tail seven. The fourth is the PIG-HEADED ARMADILLO, with nine bands. This is much larger than the former, being about two feet long from the nose to the tail. The fifth is the KABASSOU, or CATAPHRACTUS, with twelve bands, and still bigger than the former, or any other of its kind. This is often found above three feet long; but is never eaten, as the rest are. The sixth is the WEASEL-HEADED ARMADILLO, with eighteen bands, with a large piece before, and nothing but bands backward. This is above a foot long, and the tail five inches. Of all these, the kabassou and the encoubert are the largest; the rest are of a much smaller kind. In the larger kinds, the shell is much more solid than in the others, and the flesh is much harder, and unfit for the table. These are generally seen to reside in dry upland grounds, while the small pieces are always found in moist places, and in the neighbourhood of brooks and rivers. They all roll themselves into a ball; but those whose bands are fewest in number are least capable of covering themselves up completely. The tatu apara, for instance, when rolled up, presents two great interstices between its bands, by which it is very easily vulnerable, even by the feeblest of quadrupeds.

CHAP. IV.

ANIMALS OF THE BAT KIND.

HAVING in the last chapter described a race of animals that unite the boundaries between quadrupeds and insects, I come in this to a very different class, that serve to fill up the chasm between quadrupeds and birds. Some naturalists, indeed, have found animals of the bat kind so much partaking of the nature of both, that they have been at a loss in which rank to place them, and have doubted, in giving the history of the bat, whether it was a beast or a bird they were describing. These doubts, however, no longer exist; they are now universally made to take their place among quadrupeds, to which their bringing forth their young alive, their hair, their teeth, as well as the rest of their habitudes and conformation, evidently entitle them. Pliny, Gesner, and Aldrovandus, who placed them among birds, did not consider that they wanted every character of that order of animals, except the power of flying. Indeed, when this animal is seen with an awkward and struggling motion supporting itself in the air at the dusk of the evening, it presents in some measure the appearance of a bird; but naturalists, whose business it is to examine it more closely, to watch its habitudes, and inspect into its formation, are inexcusable for concurring in the mistake.

The bat in scarcely any particular resembles the bird, except in its power of sustaining itself in the air. It brings forth its young alive; it suckles them; its mouth is furnished with teeth; its lungs are formed like those of quadrupeds; its intestines, and its skeleton, have a complete resemblance, and even are, in some measure, seen to resemble those of mankind.*

The bat most common in England, is about the size of a mouse; or nearly two inches and a half long. The membranes that are usually called wings, are, properly speaking, an extension of the skin all round the body, except the head, which, when the animal flies, is kept stretched on every side, by the four interior toes of the fore feet, which are enormously long, and serve like masts that keep the canvass of a sail spread, and regulate its motions.† The first toe

* Penis propendens. † British Zoology.

is quite loose, and serves as a heel when the bat walks; or as a hook, when it would adhere to any thing. The hind feet are disengaged from the surrounding skin, and divided into five toes, somewhat resembling those of a mouse. The skin by which it flies is of a dusky colour. The body is covered with a short fur, of a mouse colour, tinged with red. The eyes are very small; the ears like those of a mouse.

This species of the bat is very common in England. It makes its first appearance early in summer, and begins its flight in the dusk of the evening. It principally frequents the sides of woods, glades, and shady walks; and is frequently observed to skim along the surface of pieces of water. It pursues gnats, moths, and nocturnal insects of every kind. It feeds upon these; but will not refuse meat, whenever it can find it. Its flight is a laborious irregular movement; and if it happens to be interrupted in its course, it cannot readily prepare for a second elevation; so that if it strikes against any object, and falls to the ground, it is usually taken.* It appears only in the most pleasant evenings, when its prey is generally abroad, and flies in pursuit with its mouth open. At other times it continues in its retreat; the chink of a ruined building, or the hollow of a tree. Thus this little animal, even in summer, sleeps the greater part of its time, never venturing out by day-light, nor in rainy weather; never hunting in quest of prey, but for a small part of the night, and then returning to its hole. But its short life is still more abridged by continuing in a torpid state during the winter. At the approach of the cold season, the bat prepares for its state of lifeless inactivity, and seems rather to choose a place where it may continue safe from interruption, than where it may be warmly or conveniently lodged. For this reason it is usually seen hanging by its hooked claws to the roofs of caves, regardless of the eternal damps that surround it. The bat seems the only animal that will venture to remain in these frightful subterranean abodes, where it continues in a torpid state, unaffected by every change of the weather.

* Mr. White, in his natural history of Selbourn, giving an account of a tame bat, says, "I saw it several times confute the vulgar opinion, that bats, when down on a flat surface, cannot get on the wing again, by rising with great ease from the floor."

Such of this kind as are not provident enough to procure themselves a deep retreat, where the cold and heat seldom vary, are sometimes exposed to great inconveniences, for the weather often becomes so mild in the midst of winter, as to warm them prematurely into life, and to allure them from their hole in quest of food, when nature has not provided a supply. These, therefore, have seldom strength to return; but having exhausted themselves in a vain pursuit after insects which are not to be found, are destroyed by the owl, or any other animal that follows such petty prey.

The bat couples and brings forth in summer, generally from two to five at a time: of this I am certain, that I have found five young ones in a hole together; but whether they were the issue of one parent, I cannot tell. The female has but two nipples, and those forward on the breast, as in the human kind. This was a sufficient motive for Linnæus to give it the title of a *primas*, to rank it in the same order with mankind, and to push this contemptible animal among the chiefs of the creation. Such arbitrary associations produce rather ridicule than instruction, and render even method contemptible; however, we are to forgive too strong an attachment to system in this able naturalist, since his application to the particular history of the animal counterbalances the defect.*

From Linnæus we learn, that the female makes no nest for her young, as most birds and quadrupeds are known to do. She is barely content with the first hole she meets, where sticking herself by her hooks against the sides of her apartment, she permits her young to hang at the nipple, and in this manner to continue for the first or second day. When, after some time, the dam begins to grow hungry, and finds a necessity of stirring abroad, she takes her little ones and sticks them to the wall, in the manner she before hung herself; there they immovably cling, and patiently wait till her return.

Thus far this animal seems closely allied to the quadruped race. Its similitude to that of birds is less striking. As nature has furnished birds with extremely strong pectoral muscles, to move the wings, and direct their flight, so has it also furnished this animal. As birds also have their legs weak, and unfit for the purposes of motion, the bat has its

* Fauna Suecica, p. 8.

legs fashioned in the same manner, and is never seen to walk, or, more properly speaking, to push itself forward with its hind legs, but in cases of extreme necessity. The toes of the fore legs, or, if we may use the expression, its extremely long fingers, extend the web like a membrane that lies between them; and this, which is extremely thin, serves to lift the little body into the air: in this manner, by an unceasing percussion, much swifter than that of birds, the animal continues, and directs its flight; however, the great labour required in flying, soon fatigues it; for, unlike birds, which continue for days together upon the wing, the bat is tired in less than an hour, and then returns to its hole, satisfied with its supply, to enjoy the darkness of its retreat.

If we consider the bat as it is seen in our own country, we shall find it a harmless inoffensive creature. It is true that it now and then steals into a larder, and, like a mouse, commits its petty thefts upon the fattest parts of the bacon. But this happens seldom; the general tenor of its industry is employed in pursuing insects that are much more noxious to us than itself can possibly be; while its evening flight, and its unsteady wabbling motion, amuse the imagination, and add one figure more to the pleasing group of animated nature.

The varieties of this animal, especially in our country, are but few; and the differences scarcely worth enumeration. Naturalists mention the Long-eared Bat, much less than that generally seen, and with much longer ears; the Horse-shoe Bat, with an odd protuberance round its upper lip, somewhat in the form of a horse-shoe; the Rhinoceros Bat, with a horn growing from the nose, somewhat similar to that animal from whence it has the name. These, with several others, whose varieties are too numerous, and differences too minute for a detail, are all inoffensive, minute, and contemptible; incapable, from their size, of injuring mankind, and not sufficiently numerous much to incommode him. But there is a larger race of bats, found in the East and West Indies, that are truly formidable; each of these is singly a dangerous enemy, but when they unite in flocks, they then become dreadful. Were the inhabitants of the African coasts,* says Des Marchais, to eat animals

* Des Marchais, vol. ii. p. 208.

of the Bat kind, as they do in the East Indies, they would never want a supply of provisions. They are there in such numbers, that, when they fly, they obscure the setting sun. In the morning, at peep of day, they are seen sticking upon the tops of the trees, and clinging to each other, like bees when they swarm, or like large clusters of cocoa. The Europeans often amuse themselves with shooting among this huge mass of living creatures, and observing their embarrassment when wounded. They sometimes enter the houses, and the negroes are expert at killing them; but although these people seem for ever hungry, yet they regard the bat with horror, and will not eat it, though ready to starve.

Of foreign bats, the largest we have any certain accounts of, is the Rousette, or the Great Bat of Madagascar. This formidable creature is near four feet broad, when the wings are extended; and a foot long, from the tip of the nose to the insertion of the tail. It resembles our bat in the form of its wings, in its manner of flying, and in its internal conformation. It differs from it in its enormous size; in its colour, which is red, like that of a fox; in its head and nose also, which resemble those of that animal, and which have induced some to call it the flying fox; it differs also in the number of its teeth; and in having a claw on the fore foot, which is wanting in ours. This formidable creature is found only in the ancient continent; particularly in Madagascar, along the coasts of Africa and Malabar, where it is usually seen about the size of a large hen. When they repose, they stick themselves to the tops of the tallest trees, and hang with their heads downward. But when they are in motion, nothing can be more formidable: they are seen in clouds, darkening the air, as well by day as by night, destroying the ripe fruits of the country, and sometimes settling upon animals, and man himself: they devour, indiscriminately, fruits, flesh, and insects, and drink the juice of the palm-tree; they are heard at night in the forests at more than two miles distance, with a horrible din, but at the approach of day they usually begin to retire: nothing is safe from their depredations; they destroy fowls and domestic animals, unless preserved with the utmost care, and often fasten upon the inhabitants themselves, attack them in the face, and inflict very terrible wounds. In short, as some have already observed, the ancients seem to have taken

their ideas of harpies from these fierce and voracious creatures, as they both concur in many parts of the description, being equally deformed, greedy, uncleanly, and cruel.

An animal not so formidable, but more mischievous than these, is the American Vampyre. This is still less than the former, but more deformed, and still more numerous. It is furnished with a horn like the rhinoceros bat; and its ears are extremely long. The other kinds generally resort to the forest, and the most deserted places; but these come into towns and cities, and, after sun-set, when they begin to fly, cover the streets like a canopy.* They are the common pest both of men and animals; they effectually destroy the one, and often distress the other. "They are," says Ulloa, "the most expert blood-letters in the world. The inhabitants of those warm latitudes being obliged, by the excessive heats, to leave open the doors and windows of the chambers where they sleep, the vampyres enter, and if they find any part of the body exposed, they never fail to fasten upon it. There they continue to suck the blood; and it often happens that the person dies under the operation. They insinuate their tooth into a vein, with all the art of the most experienced surgeon, continuing to exhaust the body until they are satiated. I have been assured," continues he, "by persons of the strictest veracity, that such an accident has happened to them; and that had they not providentially awaked, their sleep would have been their passage into eternity; having lost so large a quantity of blood as hardly to find strength to bind up the orifice. The reason why the puncture is not felt, is, besides the great precaution with which it is made, the gentle refreshing agitation of the bat's wings, which contribute to increase sleep, and soften the pain."

The purport of this account has been confirmed by various other travellers; who all agree that this bat is possessed of a faculty of drawing the blood from persons sleeping; and thus often destroying them before they awake. But still a very strong difficulty remains to be accounted for; the manner in which they inflict the wound. Ulloa, as has been seen, supposes that it is done by a single tooth; but this we know to be impossible, since the animal cannot infix one tooth without all the rest accompanying its motions; the

* Ulloa, vol. i. p. 58.

teeth of the bat kind being pretty even, and the mouth but small. Mr. Buffon, therefore, supposes the wound to be inflicted by the tongue; which, however, appears to me too large to inflict an unpainful wound; and even less qualified for that purpose than the teeth. Nor can the tongue, as Mr. Buffon seems to suppose, serve for the purposes of suction, since for this it must be hollow, like a syringe, which it is not found to be. I should therefore suppose, that the animal is endowed with a strong power of suction; and that, without inflicting any wound whatsoever, by continuing to draw, it enlarges the pores of the skin in such a manner, that the blood at length passes, and that more freely the longer the operation is continued; so that, at last, when the bat goes off, the blood continues to flow. In confirmation of this opinion we are told, that where beasts have a thick skin, this animal cannot injure them; whereas, in horses, mules, and asses, they are very liable to be thus destroyed. As to the rest, these animals are considered as one of the great pests of South America; and often prevent the peopling of many parts of that continent: having destroyed at Barja, and several other places, such cattle as were brought there by the missionaries, in order to form a settlement.

CHAP. V.

OF AMPHIBIOUS QUADRUPEDS.

THE gradations of nature, from one class of beings to another, are made by imperceptible deviations. As we saw in the foregoing chapters, quadrupeds almost degraded into the insect tribe, or mounted among the inhabitants of the air, we are at present to observe their approach to fishes, to trace the degrees by which they become more unlike terrestrial animals, till the similitude of the fish prevails over that of the quadruped.

As in opposite armies the two bodies are distinct and separated from each other, while yet between them are various troops that plunder on both sides, and are friends to neither; so between terrestrial and aquatic animals there are tribes that can scarcely be referred to any rank, but lead an amphibious life between them. Sometimes in water, some-

times on land, they seem fitted for each element, and yet completely adapted to neither. Wanting the agility of quadrupeds upon land, and the perseverance of fishes in the deep, the variety of their powers only seems to diminish their force; and, though possessed of two different methods of living, they are more inconveniently provided than such as have but one.

All quadrupeds of this kind, though covered with hair in the usual manner, are furnished with membranes between the toes, which assist their motion in the water. Their paws are broad, and their legs short, by which they are more completely fitted for swimming; for, taking short strokes at a time, they make them oftener and with greater rapidity. Some, however, of these animals are more adapted to live in the water than others; but, as their power increases to live in the deep, their unfitness for living upon land increases in the same proportion. Some, like the otter, resemble quadrupeds in every thing except in being in some measure web-footed; others depart still further, in being, like the beaver, not only web-footed, but having the tail covered with scales, like those of a fish. Others depart yet farther, as the seal and the morse, by having the hind feet stuck to the body like fins; and others, as the lamentin, almost entirely resemble fishes, by having no hind feet whatsoever. Such are the gradations of the amphibious tribe. They all, however, get their living in the water, either by habit or conformation; they all continue a long time under water; they all consider that element as their proper abode; whenever pressed by danger, they fly to the water for security; and, when upon land, appear watchful, timorous, and unwieldy.

THE OTTER.*

In the first step of the progression from land to amphibious animals, we find the Otter, resembling those of the terrestrial kind in shape, hair, and internal conformation; resembling the aquatic tribes in its manner of living, and in having membranes between the toes to assist it in swimming. From this peculiar make of its feet, which are very

* The otter differs in no respect from the weasel kind, except in having the feet webbed, and in living almost constantly in the water, from whence they chiefly derive their food, which is fish.

short, it swims even faster than it runs, and can overtake fishes in their own element. The colour of this animal is brown; and it is somewhat of the shape of an overgrown weasel, being long, slender, and soft skinned. However, if we examine its figure in detail, we shall find it unlike any other animal hitherto described, and of such a shape as words can but weakly convey. Its usual length is about two feet, from the tip of the nose to the insertion of the tail; the head and nose are broad and flat; the mouth bears some similitude to that of a fish; the neck is short, and equal in thickness to the head; the body long; the tail broad at the insertion, but tapering off to a point at the end; the eyes are very small, and placed nearer the nose than usual in quadrupeds. The legs are very short, but remarkably strong, broad, and muscular. The joints are articulated so loosely, that the animal is capable of turning them quite back, and bringing them on a line with the body, so as to perform the office of fins. Each foot is furnished with five toes, connected by strong broad webs like those of water-fowl. Thus nature, in every part, has had attention to the life of an animal whose food is fish, and whose haunts must necessarily be about water.

This voracious animal is never found but at the sides of lakes and rivers, but particularly the former, for it is seldom fond of fishing in a running stream, for the current of the water having more power upon it than the fishes it pursues, if it hunts against the stream, it swims too slow; and if with the stream, it overshoots its prey. However, when in rivers, it is always observed to swim against the stream, and to meet the fishes it preys upon, rather than to pursue them. In lakes it destroys much more than it devours, and is often seen to spoil a pond in the space of a few nights. But the damage they do by destroying fish is not so great as their tearing in pieces the nets of the fishers, which they infallibly do whenever they happen to be entangled. The instant they find themselves caught, they go to work with their teeth, and in a few minutes destroy nets of a very considerable value.

The otter has two different methods of fishing; the one by catching its prey from the bottom upward, the other by pursuing it into some little creek, and seizing it there. In the former case, as this animal has longer lungs than most

other quadrupeds, upon taking in a quantity of air, it can remain for some minutes at the bottom; and whatever fish passes over at that time is certainly taken; for as the eyes of fish are placed so as not to see under them, the otter attacks them off their guard from below; and, seizing them at once by the belly, drags them on shore, where it often leaves them untouched, to continue the pursuit for hours together. The other method is chiefly practised in lakes and ponds, where there is no current: the fish thus taken are rather of the smaller kind, for the great ones will never be driven out of deep water.

In this manner the otter usually lives during the summer, being furnished with a supply much greater than its consumption: killing for its amusement, and infecting the edges of the lake with quantities of dead fish, which it leaves there as trophies rather of its victory than its necessities. But in winter, when the lakes are frozen over, and the rivers pour with a rapid torrent, the otter is often greatly distressed for provisions; and is then obliged to live upon grass, weeds, and even the bark of trees. It then comes upon land, and, grown courageous from necessity, feeds upon terrestrial animals, rats, insects, and even sheep themselves. Nature, however, has given it the power of continuing a long time without food; and although, during that season, it is not rendered quite torpid, like the marmout or the dormouse, yet it keeps much more within its retreat, which is usually the hollow of a bank, worn under by the water. There it often forms a kind of gallery, running for several yards along the edge of the water; so that when attacked at one end, it flies to the other, and often evades the fowler by plunging into the water at forty or fifty paces distance, while he expects to find it just before him.

We learn from Mr. Buffon, that this animal, in France, couples in winter, and brings forth in the beginning of spring. But it is certainly different with us, for its young are never found till the latter end of summer; and I have frequently, when a boy, discovered their retreats, and pursued them at that season. I am, therefore, more inclined to follow the account given us of this animal by Mr. Lots, of the Academy of Stockholm, who assures us that it couples about the middle of summer, and brings forth at

the end of nine weeks, generally three or four at a time. This, as well as the generality of his other remarks on this subject, agrees so exactly with what I remember concerning it, that I will beg leave to take him for my guide, assuring the reader that, however extraordinary the account may seem, I know it to be certainly true.

In the rivers and the lakes frequented by the otter, the bottom is generally stony and uneven, with many trunks of trees, and long roots stretching underneath the water.* The shore also is hollow and scooped inward by the waves. These are the places the otter chiefly chooses for its retreat; and there is scarcely a stone which does not bear the mark of its residence, as upon them its excrements are always made. It is chiefly by this mark that its lurking-places are known, as well as by the quantity of dead fish that are found lying here and there upon the banks of the water. To take the old ones alive is no easy task, as they are extremely strong, and there are few dogs that will dare to encounter them. They bite with great fierceness, and never let go their hold when they have once fastened. The best way therefore is to shoot them at once, as they never will be thoroughly tamed; and, if kept for the purposes of fishing, are always apt to take the first opportunity of escaping. But the young ones may be more easily taken, and converted to very useful purposes. The otter brings forth its young generally under the hollow banks, upon a bed of rushes, flags, or such weeds as the place affords it in the greatest quantities. I see in the British Zoology a description of its habitation, where that naturalist observes, "that it burrows under ground, on the banks of some river or lake, and always makes the entrance of its hole under water, then works up to the surface of the earth, and there makes a minute orifice for the admission of air, and this little air-hole is often found in the middle of some thicket." In some places this may be true, but I have never observed any such contrivance; the retreat, indeed, was always at the edge of the water, but it was only sheltered by the impending bank; and the otter itself seemed to have but a small share in its formation. But be this as it may, the young ones are always found at the edge of the water; and, if under the protection of the dam, she teaches them

* Journal Etranger, Juin 1755, p. 14.

instantly to plunge, like herself, into the deep, and escape among the rushes or weeds that fringe the stream. At such times, therefore, it is very difficult to take them; for, though never so young, they swim with great rapidity, and in such a manner that no part of them is seen above water, except the tip of the nose. It is only when the dam is absent that they can be taken; and, in some places, there are dogs purposely trained for discovering their retreats. Whenever the dog comes to the place, he soon, by his barking, shews that the otter is there; which, if there be an old one, instantly plunges into the water, and the young all follow. But if the old one be absent, they continue terrified, and will not venture forth but under her guidance and protection. In this manner they are secured, and taken home alive, where they are carefully fed with small fish and water. In proportion, however, as they gather strength, they have milk mixed among their food, the quantity of their fish provision is retrenched, and that of vegetables is increased, until at length they are fed wholly upon bread, which perfectly agrees with their constitution. The manner of training them up to hunt for fish requires not only assiduity, but patience; however, their activity and use, when taught, greatly repays the trouble of teaching; and, perhaps, no other animal is more beneficial to its master. The usual way is, first to learn them to fetch, as dogs are instructed; but, as they have not the same docility, so it requires more art and experience to teach them. It is usually performed by accustoming them to take a truss stuffed with wool, of the shape of a fish, and made of leather, in their mouths, and to drop it at the word of command; to run after it when thrown forward, and to bring it to their master. From this they proceed to real fish, which are thrown dead into the water, and which they are taught to fetch from thence. From the dead they proceed to the live, until at last the animal is perfectly instructed in the whole art of fishing. An otter thus taught is a very valuable animal, and will catch fish enough to sustain not only itself but a whole family. I have seen one of these go to a gentleman's pond at the word of command, drive up the fish into a corner, and seizing upon the largest of the whole, bring it off, in its mouth, to its master.

Otters are to be met with in most parts of the world,

and rather differ in size and colour from each other, than in habitudes or conformation.* In North America, and Carolina, they are usually found white, inclining to yellow. The Brasilian otter is much larger than ours, with a roundish head, almost like a cat. The tail is shorter, being but five inches long; and the hair is soft, short, and black, except on the head, where it is of a dark brown, with a yellowish spot under the throat.

THE BEAVER.

In all countries, as man is civilized and improved, the lower ranks are repressed and degraded.† Either reduced to servitude, or treated as rebels, all their societies are dissolved, and all their united talents rendered ineffectual. Their feeble arts quickly disappear, and nothing remains but their solitary instincts, or those foreign habitudes which they receive from human education. For this reason there remain no traces of their ancient talents and industry, except in those countries where man himself is a stranger; where unvisited by his controlling power, for a long succession of ages, their little talents have had time to come to their limited perfection, and their common designs have been capable of being united.

The beaver seems to be now the only remaining monument of brutal society. From the result of its labours, which are still to be seen in the remote parts of America, we learn how far instinct can be aided by imitation. We from thence perceive to what a degree animals, without language or reason, can concur for their mutual advantage, and attain by numbers those advantages which each in a state of solitude seems unfitted to possess.

If we examine the beaver merely as an individual, and unconnected with others of its kind, we shall find many other quadrupeds to exceed it in cunning, and almost all in the powers of annoyance and defence. The beaver, when taken from its fellows, and kept in a state of solitude or domestic tameness, appears to be a mild gentle creature, familiar enough, but somewhat dull, and even melancholy; without any violent passions or vehement appetites, moving but seldom, making no efforts to attain any good, except in gnawing the wall of its prison, in order to regain its

* Ray. † Buffon.

freedom; yet this, however, without anger or precipitation, but calm and indifferent to all about, without attachment or antipathies, neither seeking to offend nor desiring to please. It appears inferior to the dog in those qualities which render animals of service to man; it seems made neither to serve, to command, nor to have connections with any other set of beings, and is only adapted for living among its kind. Its talents are entirely repressed in solitude, and are only brought out by society. When alone, it has but little industry, few tricks, and without cunning sufficient to guard it against the most obvious and bungling snares laid for it by the hunter. Far from attacking any other animal, it is scarcely possessed of the arts of defence. Preferring flight to combat, like all wild animals, it only resists when driven to an extremity, and fights only when its speed can no longer avail.

But this animal is rather more remarkable for the singularity of its conformation, than any intellectual superiorities it may be supposed, in a state of solitude, to possess. The beaver is the only creature among quadrupeds that has a flat broad tail, covered with scales, which serves as a rudder to direct its motions in the water. It is the sole quadruped that has membranes between the toes on the hind feet only, and none on the fore feet, which supply the place of hands, as in the squirrel. In short, it is the only animal that in its fore parts entirely resembles a quadruped, and in its hinder parts seems to approach the nature of fishes, by having a scaly tail. In other respects, it is about two feet long, and near one foot high; it is somewhat shaped like a rat, except the tail, which, as has been observed, is flat and scaly, somewhat resembling a neat's tongue at the point. Its colour is of a light brown; the hair of two sorts; the one longer and coarser, the other soft, fine, short, and silky. The teeth are like those of a rat or a squirrel, but longer and stronger, and admirably adapted to cutting timber or stripping bark, to which purposes they are constantly applied. One singularity more may be mentioned in its conformation; which is, that, like birds, it has but one and the same vent for the emission of its excrements and its urine; a strange peculiarity, but which anatomists leave us no room to doubt of.

The beavers begin to assemble about the months of June

and July, to form a society that is to continue for the greatest part of the year. They arrive in numbers from every side, and generally form a company of above two hundred. The place of meeting is commonly the place where they fix their abode, and this is always by the side of some lake or river. If it be a lake, in which the waters are always upon a level, they dispense with building a dam; but if it be a running stream, which is subject to floods and falls, they then set about building a dam, or pier, that crosses the river, so that it forms a dead water in that part which lies above and below. This dam, or pier, is often fourscore or a hundred feet long, and ten or twelve feet thick at the base. If we compare the greatness of the work with the powers of the architect, it will appear enormous; but the solidity with which it is built is still more astonishing than its size. The part of the river over which this dam is usually built, is where it is most shallow, and where some great tree is found growing by the side of the stream. This they pitch upon as proper for making the principal part in their building; and, although it is often thicker than a man's body, they instantly set about cutting it down. For this operation they have no other instrument but their teeth, which soon lay it level, and that also on the side they wish it to fall, which is always across the stream. They then fall about cutting off the top branches, to make it lie close and even, and serve as the principal beam of their fabric.*

This dike, or causey, is sometimes ten, and sometimes twelve feet thick, at the foundation. It descends in a declivity, or slope, on that side next the water, which gravitates upon the work in proportion to the height, and presses it with a prodigious force towards the earth. The opposite side is erected perpendicular, like our walls; and that declivity, which, at the bottom, or basis, is about twelve feet broad, diminishes towards the top, where it is no more than two feet broad, or thereabouts. The materials whereof this mole consists, are wood and clay. The beavers cut, with surprising ease, large pieces of wood, some as thick as one's arm or thigh, and about four, five, or six feet in length, or sometimes more, according as the slope ascends. They drive one end of these stakes into the ground, at a small distance one from the other, intermingling a few

* Spectacle de la Nature.

with them that are smaller and more pliant. As the water, however, would find a passage through the intervals or spaces between them, and leave the reservoir dry, they have recourse to a clay, which they know where to find, and with which they stop up all the cavities both within and without, so that the water is duly confined. They continue to raise the dike in proportion to the elevation of the water, and the plenty which they have of it. They are conscious, likewise, that the conveyance of their materials by land would not be so easily accomplished as by water; and therefore they take the advantage of its increase, and swim with their mortar on their tails, and their stakes between their teeth, to the places where there is most occasion for them. If their works are, either by the force of the water, or the feet of the huntsmen who run over them, in the least damnified, the breach is instantly made up; every nook and corner of the habitation is reviewed, and, with the utmost diligence and application, perfectly repaired. But when they find the huntsmen visit them too often, they work only in the night-time, or else abandon their works entirely, and seek out for some safer situation.

The dike, or mole, being thus completed, their next care is to erect their several apartments, which are either round or oval, and divided into three stories, one raised above the other: the first below the level of the causey, which is for the most part full of water; the other two above it. This little fabric is built in a very firm and substantial manner, on the edge of their reservoir, and always in such divisions or apartments as above mentioned; that, in case of the water's increase, they may move up a story higher, and be no ways incommoded. If they find any little island contiguous to their reservoir, they fix their mansion there, which is then more solid, and not so frequently exposed to the overflowing of the water, in which they are not able to continue for any length of time. In case they cannot pitch upon so commodious a situation, they drive piles into the earth, in order to fence and fortify their habitation against the wind as well as the water. They make two apertures, at the bottom, to the stream; one is a passage to their bagnio, which they always keep neat and clean; the other leads to that part of the building where every thing is conveyed that will either soil or damage their

upper apartments. They have a third opening, or doorway, much higher, contrived for the prevention of their being shut up and confined, when the frost and snow has closed the apertures of the lower floors. Sometimes they build their houses altogether upon dry land; but then they sink trenches five or six feet deep, in order to descend into the water when they see convenient. They make use of the same materials; and are equally industrious in the erection of their lodges, as their dikes. Their walls are perpendicular, and about two feet thick. As their teeth are more serviceable than saws, they cut off all the wood that projects beyond the wall. After this, when they have mixed up some clay and dry grass together, they work it into a kind of mortar, with which, by the help of their tails, they plaster all their works, both within and without.

The inside is vaulted, and is large enough for the reception of eight or ten beavers. In case it rises in an oval figure, it is for the generality above twelve feet long, and eight or ten feet broad. If the number of inhabitants increase to fifteen, twenty, or thirty, the edifice is enlarged in proportion. I have been credibly informed, that four hundred beavers have been discovered to reside in one large mansion-house, divided into a vast number of apartments, that had a free communication one with another.

All these works, more especially in the northern parts, are finished in August, or September at farthest; at which time they begin to lay in their stores. During the summer they are perfect epicures; and regale themselves every day on the choicest fruits and plants the country affords. Their provisions, indeed, in the winter season, principally consist of the wood of the birch, the plane, and some few other trees, which they steep in water, from time to time, in such quantities as are proportioned to the number of inhabitants. They cut down branches from three to ten feet in length. Those of the largest dimensions are conveyed to their magazines by a whole body of beavers; but the smallest by one only: each of them, however, takes a different way, and has his proper walk assigned him, in order that no one labourer should interrupt another in the prosecution of his work. Their wood-yards are larger or smaller, in proportion to the number in the family; and, according to the observation of some curious naturalists, the usual stock of

timber, for the accommodation of ten beavers, consists of about thirty feet in a square surface, and ten in depth. These logs are not thrown up in one continued pile, but laid one across the other, with intervals, or small spaces between them, in order to take out, with the greater facility, but just such a quantity as they shall want for their immediate consumption, and those parcels only, which lie at the bottom in the water, and have been duly steeped. This timber is cut again into small particles, and conveyed to one of their largest lodges, where the whole family meet, to consume their respective dividends, which are made impartially, in even and equal portions. Sometimes they traverse the woods, and regale their young with a more novel and elegant entertainment.

Such as are used to hunt these animals, know perfectly well that green wood is much more acceptable to them than that which is old and dry; for which reason they plant a considerable quantity of it round their lodgments; and as they come out to partake of it, they either catch them in snares, or take them by surprise. In the winter, when the frosts are very severe, they sometimes break a large hole in the ice; and when the beavers resort thither for the benefit of a little fresh air, they either kill them with their hatchets, or cover the opening with a large substantial net. After this, they undermine and subvert the whole fabric; whereupon the beavers, in hopes to make their escape in the usual way, fly with the utmost precipitation to the water; and plunging into the aperture, fall directly into the net, and are inevitably taken.

THE SEAL.

Every step we proceed in the description of amphibious quadrupeds, we make nearer advances to the tribe of fishes. We first observed the otter with its feet webbed, and formed for an aquatic life; we next saw the beaver with the hinder parts covered with scales, resembling those of fishes; and we now come to a class of animals in which the shape and habitude of fishes still more apparently prevail, and whose internal conformation attaches them very closely to the water. The seal, in general, resembles a quadruped in some respects, and a fish in others. The head is round, like that of a man; the nose broad, like that of the otter;

the teeth like those of a dog; the eyes large and sparkling; no external ears, but holes that serve for that purpose; the neck is well proportioned, and of a moderate length; but the body thickest where the neck is joined to it. From thence the animal tapers down to the tail, growing all the way smaller like a fish. The whole body is covered with a thick bristly shining hair, which looks as if it were entirely rubbed over with oil; and thus far the quadruped prevails over the aquatic. But it is in the feet that this animal greatly differs from all the rest of the quadruped kind; for though furnished with the same number of bones with other quadrupeds, yet they are so stuck on the body, and so covered with a membrane, that they more resemble fins than feet; and might be taken for such, did not the claws with which they are pointed shew their proper analogy. In the fore feet, or rather hands, all the arm and the cubit are hid under the skin, and nothing appears but the hand from the wrist downwards; so that if we imagine a child with its arms swathed down, and nothing appearing but its hands at each side of the body, towards the breast, we may have some idea of the formation of this animal in that part. These hands are covered in a thick skin, which serves like a fin for swimming; and are distinguished by five claws, which are long, black, and piercing. As to the hind feet, they are stretched out on each side of the short tail covered with a hairy skin like the former, and both together almost joining at the tail; the whole looks like the broad flat tail of a fish; and, were it not for five claws which appear, might be considered as such. The dimensions of this animal are various, being found from four feet long to nine. They differ also in their colours; some being black, others spotted, some white, and many more yellow. It would, therefore, be almost endless to mention the varieties of this animal. Buffon describes three; and Krantz mentions five, all different from those described by the other. I might, were I fond of such honours, claim the merit of being a first describer myself; but, in fact, the varieties of this animal are so many, that were they all described, the catalogue would be as extensive as it would be useless and unentertaining. It is sufficient to observe, that they agree in the general external characters already mentioned, and internally in two or

three more, which are so remarkable as to deserve peculiar attention.

It has been often remarked, that all animals are sagacious in proportion to the size of their brain. It has, in support of this opinion, been alleged, that man, with respect to his bulk, has, of all others, the largest. In pursuance of this assumption, some erroneous speculations have been formed. But, were the size of the brain to determine the quantity of the understanding, the seal would, of all other animals, be the most sagacious; for it has, in proportion, the largest brain of any, even man himself not excepted. However, this animal is possessed of but very few advantages over other quadrupeds; and the size of its brain furnishes it with few powers that contribute to its wisdom or its preservation.

This animal differs also in the formation of its tongue from all other quadrupeds. It is forked or slit at the end, like that of serpents; but for what purpose it is thus singularly contrived we are at a loss to know. We are much better informed with respect to a third singularity in its conformation, which is, that the *foramen ovale* in the heart is open. Those who are in the least acquainted with anatomy, know, that the veins uniting bring their blood to the heart, which sends it into the lungs, and from thence it returns to the heart again to be distributed through the whole body. Animals, however, before they are born, make no use of their lungs; and therefore their blood, without entering their lungs, takes a shorter passage through the very partition of the heart, from one of its chambers to the other, thus passing from the veins directly into those vessels that drive it through the whole frame. But the moment the animal is brought forth, the passage through the partition, which passage is called the *foramen ovale*, closes up, and continues closed for ever; for the blood then takes its longest course through the lungs to return to the other chamber of the heart again. Now the seal's heart resembles that of an infant in the womb, for the *foramen ovale* never closes ;* and although the blood of

* I have followed the usual observations of naturalists with respect to the *foramen ovale* in this animal: I have many reasons, however, to incline me to think that the *foramen* is not entirely open. But this is not the place for a critical inquiry of this kind.

this animal commonly circulates through the lungs, yet it can circulate without their assistance, as was observed above, by a shorter way. From hence, therefore, we see the manner in which this animal is adapted for continuing under water; for, being under no immediate necessity of breathing, the vital motions are still carried on while it continues at the bottom: so that it can pursue its prey in that element, and yet enjoy all the delights and advantages of ours.

The water is the seal's usual habitation, and whatever fish it can catch its food. Though not equal in instinct and cunning to some terrestrial animals, it is greatly superior to the mute tenants of that element in which it chiefly resides. Although it can continue for several minutes under water, yet it is not able, like fishes, to remain there for any length of time; and a seal may be drowned, like any other terrestrial animal. Thus it seems superior, in some respects, to the inhabitants of both elements, and inferior in many more. Although furnished with legs, it is, in some measure, deprived of all the advantages of them.* They are shut up within its body, while nothing appears but the extremities of them, and these furnished with very little motion, but to serve them as fins in the water. The hind feet, indeed, being turned backwards, are entirely useless upon land; so that when the animal is obliged to move, it drags itself forward like a reptile, and with an effort more painful. For this purpose it is obliged to use its fore-feet, which, though very short, serve to give it such a degree of swiftness that a man cannot readily overtake it; and it runs towards the sea. As it is thus awkwardly formed for going upon land, it is seldom found at any distance from the sea-shore, but continues to bask upon the rocks; and when disturbed always plunges down at once to the bottom.

The seal is a social animal, and wherever it frequents, numbers are generally seen together. They are found in every climate, but in the north and icy seas they are particularly numerous. It is on those shores, which are less inhabited than ours, and where the fish resort in greater abundance, that they are seen by thousands, like flocks of sheep, basking on the rocks, and suckling their young. There they keep watch like other gregarious animals; and,

* Buffon.

if an enemy appear, instantly plunge all together into the water. In fine weather they more usually employ their time in fishing; and generally come on shore in tempests and storms. The seal seems the only animal that takes delight in these tremendous conflicts of nature. In the midst of thunders and torrents, when every other creature takes refuge from the fury of the elements, the seals are seen by thousands sporting along the shore, and delighted with the universal disorder! This, however, may arise from the sea being at that time too turbulent for them to reside in; and they may then particularly come upon land when unable to resist the shock of their more usual element.

As seals are gregarious, so are they also animals of passage, and perhaps the only quadrupeds that migrate from one part of the world to another. The generality of quadrupeds are contented with their native plains and forests, and seldom stray, except when necessity or fear impels them. But seals change their habitation, and are seen in vast multitudes directing their course from one continent to another.* On the northern coasts of Greenland they are seen to retire in July, and to return again in September. This time it is supposed they go in pursuit of food. But they make a second departure in March, to cast their young, and return in the beginning of June, young and all, in a great body together, observing in their route a certain fixed time and track, like birds of passage. When they go upon this expedition, they are seen in great droves, for many days together, making towards the north, taking that part of the sea most free from ice, and going still forward into those seas where man cannot follow. In what manner they return, or by what passage, is utterly unknown; it is only observed, that when they leave the coasts to go upon this expedition, they are all extremely fat, but on their return they come home excessively lean.

The females, in our climate, bring forth in winter, and rear their young upon some sand-bank, rock, or desolate island, at some distance from the continent. When they suckle their young they sit up on their hinder-legs, while these, which are at first white, with woolly hair, cling to the teats, of which there are four in number, near the navel.† In this manner the young continue in the place

* Krantz, vol. i. p. 129.

† Coeunt in littore resupinata femina. Lin. Syst.

where they are brought forth, for twelve or fifteen days; after which the dam brings them down to the water, and accustoms them to swim and get their food by their own industry. As each litter never exceeds above three or four, so the animal's cares are not much divided, and the education of her little ones is soon completed. In fact, the young are particularly docile; they understand the mother's voice among the numerous bleatings of the rest of the old ones; they mutually assist each other in danger, and are perfectly obedient to her call. Thus early accustomed to subjection, they continue to live in society, hunt and herd together, and have a variety of tones by which they encourage to pursue, or warn each other of danger. Some compare their voices to the bleating of a flock of sheep, interrupted now and then by the barking of angry dogs, and sometimes the shriller notes of a cat. All along the shore, each has its own peculiar rock, of which it takes possession, and where it sleeps when fatigued with fishing, uninterrupted by any of the rest. The only season when their social spirit seems to forsake them, is that when they feel the influences of natural desire. They then fight most desperately, and the male that is victorious keeps all the females to himself. Their combats, on these occasions, are managed with great obstinacy, and yet great justice: two are never seen to fall upon one together; but each has its antagonist, and all fight an equal battle, till one alone becomes victorious.

We are not certainly informed how long the females continue pregnant; but if we may judge from the time which intervenes between their departure from the Greenland coasts and their return, they cannot go above seven or eight months at the farthest. How long this animal lives is also unknown: a gentleman, whom I knew in Ireland, kept two of them, which he had taken very young, in his house for ten years; and they appeared to have the marks of age at the time I saw them, for they were grown gray about the muzzle; and it is very probable they did not live many years longer. In their natural state the old ones are seen very fat and torpid, separated from the rest, and, as it should seem, incapable of procreation.

As their chief food is fish, so they are very expert at pursuing and catching it. In those places where the herrings are seen in shoals, the seals frequent and destroy them

by thousands. When the herring retires, the seal is then obliged to hunt after fish that are stronger and more capable of evading the pursuit: however, they are very swift in deep waters, dive with great rapidity, and, while the spectator eyes the spot at which they disappear, they are seen to emerge at above a hundred yards distance. The weaker fishes, therefore, have no other means to escape their tyranny, but by darting into the shallows. The seal has been seen to pursue a mullet, which is a swift swimmer, and to turn it to and fro in deep water, as a hound does a hare on land. The mullet has been seen trying every art of evasion; and at last swimming into shallow water, in hopes of escaping. There, however, the seal followed; so that the little animal had no other way left to escape, but to throw itself on one side, by which means it darted into shoaler water than it could have swam in with the belly undermost; and thus at last it got free.

As they are thus the tyrants of the element in which they chiefly reside, so they are not very fearful even upon land, except on those shores which are thickly inhabited, and from whence they have been frequently pursued. Along the desert coasts, where they are seldom interrupted by man, they seem to be very bold and courageous; if attacked with stones, like dogs, they bite such as are thrown against them; if encountered more closely, they make a desperate resistance, and, while they have any life, attempt to annoy their enemy. Some have been known, even while they were skinning, to turn round and seize their butchers; but they are generally dispatched by a stunning blow on the nose. They usually sleep soundly when not frequently disturbed; and that is the time when the hunters surprise them. The Europeans who go into the Greenland seas upon the whale fishery, surround them with nets, and knock them on the head; but the Greenlanders, who are unprovided with so expensive an apparatus, destroy them in a different manner. One of these little men paddles away in his boat, and when he sees a seal asleep on the side of a rock, darts his lance, and that with such unerring aim, that it never fails to bury its point in the animal's side. The seal, feeling itself wounded, instantly plunges from the top of the rock, lance and all, into the sea, and dives to the bottom; but the lance has a bladder tied to one end, which keeps buoyant, and resists the animal's descent; so that every time the seal rises to the top of the water the

Greenlander strikes it with his oar, until he at last dispatches it. But, in our climate, the seals are much more wary, and seldom suffer the hunters to come near them. They are often seen upon the rocks of the Cornish coast, basking in the sun, or upon the inaccessible cliffs left dry by the tide. There they continue, extremely watchful, and never sleep long without moving; seldom longer than a minute; for then they raise their heads, and if they see no danger, they lie down again, raising and reclining their heads alternately, at intervals of about a minute each. The only method, therefore, that can be taken, is to shoot them: if they chance to escape, they hasten towards the deep, flinging stones and dirt behind them as they scramble along, and at the same time expressing their pain, or their fears, by the most distressful cry; if they happen to be overtaken, they make a vigorous resistance with their feet and teeth, till they are killed.

The seal is taken for the sake of its skin, and for the oil its fat yields. The former sells for about four shillings; and, when dressed, is very useful in covering trunks, making waistcoats, shot-pouches, and several other conveniences. The flesh of this animal formerly found place at the tables of the great. At a feast provided by Archbishop Neville, for Edward the Fourth, there were twelve seals and porpoises provided, among other extraordinary rarities.

As a variety of this animal, we may mention the SEA-LION, described in Anson's Voyages. This is much larger than any of the former; being from eleven to eighteen feet long. It is so fat, that when the skin is taken off, the blubber lies a foot thick all round the body. It seems to differ from the ordinary seal, not only in its size, but also in its food; for it is often seen to graze along the shore, and to feed upon the long grass that grows up along the edges of brooks. Its cry is very various, sometimes resembling the neighing of a horse, and sometimes the grunting of a hog. It may be regarded as the largest of the seal family.

THE MORSE.

THE Morse is an animal of the seal kind; but differing from the rest, in a very particular formation of the teeth, having two large tusks growing from the upper jaw, shaped like those of an elephant, but directed downwards; whereas,

in the elephant, they grow upright, like horns; it also wants the cutting teeth, both above and below: as to the rest, it pretty much resembles a seal, except that it is much larger, being from twelve to sixteen feet long. The morses are also generally seen to frequent the same places that seals are known to reside in; they have the same habitudes, the same advantages, and the same imperfections. There are, however, fewer varieties of the morse than the seal; and they are rarely found, except in the frozen regions near the pole. They were formerly more numerous than at present; and the savage natives of the coasts of Greenland destroyed them in much greater quantities, before those seas were visited by European ships upon the whale-fishery, than now. Whether these animals have been since actually thinned by the fishers, or have removed to some more distant and unfrequented shores, is not known; but certain it is, that the Greenlanders, who once had plenty, are now obliged to toil more assiduously for subsistence; and as the quantity of their provisions decrease, for they live mostly upon seals, the numbers of that poor people are every day diminishing. As to the teeth, they are generally from two to three feet long; and the ivory is much more esteemed than that of the elephant, being whiter and harder. The fishers have been known formerly to kill three or four hundred at once; and along those shores where they chiefly frequented, their bones are still seen lying in prodigious quantities. In this manner a supply of provisions, which would have supported the Greenland nation for ages, has been, in a few years, sacrificed to those who did not use them, but who sought them for the purposes of avarice and luxury!

THE MANATI.

We come, in the last place, to an animal that terminates the boundary between quadrupeds and fishes. Instead of a creature preying among the deeps, and retiring upon land for repose or refreshment, we have here an animal that never leaves the water, and is enabled to live only there. It cannot be called a quadruped, as it has but two legs only; nor can it be called a fish, as it is covered with hair. In short, it forms the link that unites those two great tribes to each other; and may be indiscriminately called the last of beasts, or the first of fishes.

We have seen the seal approaching nearly to the aquatic tribes, by having its hind legs thrown back on each side of the tail, and forming something that resembled the tail of a fish; but upon examining the skeleton of that animal, its title to the rank of a quadruped was observed plainly to appear, having all the bones of the hinder legs and feet as complete as any other animal whatsoever.

But we are now come to a creature that not only wants the external appearance of hinder legs, but, when examined internally, will be found to want them altogether. The Manati is somewhat shaped in the head and the body like a seal; it has also the fore legs or hands pretty much in the same manner, short and webbed, but with four claws only; these also are shorter in proportion than in the former animal, and placed nearer the head; so that they can scarcely assist its motions upon land. But it is in the hinder parts that it chiefly differs from all others of the seal kind; for the tail is perfectly that of a fish, being spread out broad like a fan, and wanting even the vestiges of those bones which make the legs and feet in others of its kind. The largest of these are about twenty-six feet in length; the skin is blackish, very tough and hard; when cut, as black as ebony; and there are a few hairs scattered, like bristles, of about an inch long. The eyes are very small, in proportion to the animal's head; and the ear-holes, for it has no external ears, are so narrow as scarcely to admit a pin's head. The tongue is so short, that some have pretended it has none at all; and the teeth are composed only of two solid white bones, running the whole length of both jaws, and formed merely for chewing, and not tearing its vegetable food. The female has breasts placed forward, like those of a woman; and she brings forth but one at a time: this she holds with her paws to her bosom; there it sticks, and accompanies her wherever she goes.

This animal can scarcely be called amphibious, as it never entirely leaves the water, only advancing the head out of the stream to reach the grass on the river sides. Its food is entirely upon vegetables; and, therefore, it is never found far in the open sea, but chiefly in the large rivers of South America; and often above two thousand miles from the ocean. It is also found in the seas near Kamtschatka, and feeds upon the weeds that grow near the shore. There are

likewise level greens at the bottom of some of the Indian bays, and there the manaties are harmlessly seen grazing among turtles and other crustaceous fishes, neither giving nor fearing any disturbance. These animals, when unmolested, keep together in large companies, and surround their young ones.* They bring forth most commonly in autumn; and it is supposed they go with young eighteen months, for the time of generation is in spring.

The manati has no voice nor cry, for the only noise it makes is by fetching its breath. Its internal parts somewhat resemble those of a horse; its intestines being longer, in proportion, than those of any other creature, the horse only excepted.

The fat of the manati, which lies under the skin, when exposed to the sun, has a fine smell and taste, and far exceeds the fat of any sea animal; it has this peculiar property, that the heat of the sun will not spoil it, nor make it grow rancid; its taste is like the oil of sweet almonds; and it will serve very well, in all cases, instead of butter: any quantity may be taken inwardly with safety, for it has no other effect than keeping the body open. The fat of the tail is of a harder consistence; and, when boiled, is more delicate than the former. The lean is like beef, but more red; and may be kept a long while, in the hottest days, without tainting. It takes up a long time in boiling; and, when done, eats like beef. The fat of the young ones is like pork; the lean is like veal; and, upon the whole, it is very probable that this animal's flesh somewhat resembles that of turtle; since they are fed in the same element, and upon the very same food. The turtle is a delicacy well known among us: our luxuries are not as yet sufficiently heightened to introduce the manati; which, if it could be brought over, might singly suffice for a whole corporation!

* Acta Petropolitana.

[To these amphibious quadrupeds may be added that most extraordinary animal, the DUCK-BILLED PLATYPUS, described by Dr. Shaw in his Naturalist's Miscellany. The body is depressed, and has some resemblance to that of an otter in miniature; and is covered with a soft beaver-like fur: but its most striking peculiarity is the strange situation of its mouth or snout, exhibiting the perfect resemblance of the beak of a duck engrafted on the head of a quadruped; and so accurate is the similitude, that at first view it naturally excites the idea of some deceptive preparation by artificial means. It is a native of New Holland.]

BOOK VII.

OF THE MONKEY KIND,—THE ELEPHANT, RHINOCEROS, ETC.

CHAP. I.

ANIMALS OF THE MONKEY KIND.

QUADRUPEDS may be considered as a numerous group, terminated on every side by some that but in part deserve the name. On one quarter we see a tribe covered with quills, or furnished with wings, that lift them among the inhabitants of the air; on another, we behold a diversity clothed with scales and shells, to rank with insects; and still, on a third, we see them descending into the waters, to live among the mute tenants of that element. We now come to a numerous tribe that, leaving the brute creation, seem to make approaches even to humanity; that bear an awkward resemblance of the human form, and discover some faint efforts at intellectual sagacity.

Animals of the monkey class are furnished with hands instead of paws; their ears, eyes, eye-lids, lips, and breasts, are like those of mankind; their internal conformation also bears some distant likeness; and the whole offers a picture that may well mortify the pride of such as make their persons alone the principal object of their admiration. These approaches, however, are gradual; and some bear the marks of this our boasted form more strongly than others.

In the Ape* kind we see the whole external machine strongly impressed with the human likeness, and capable of the same exertions: these walk upright, want a tail, have fleshy posteriors, have calves to their legs, and feet nearly like ours.

*Caubasson relates a laughable story of an ape, which became so attached to him, as to be desirous of accompanying him wherever he went. Once the animal secretly followed the father to church, where silently mounting on the top of the sounding board above the pulpit, he lay perfectly still till the sermon began. He then crept to the edge, and overlooking the preacher, imitated all his gestures in so grotesque a manner, that the whole congregation were unavoidably excited to laugh. The father, surprised at this ill-timed levity, reproved his audience. The reproof failed in its effect, for the congregation still laughed, and the preacher in the warmth of his zeal redoubled his actions and his vociferations. These the ape so exactly imitated, that all respect for their pastor was swallowed up in the scene before them, and they burst out into a loud and continued roar of laughter. A friend of the preacher at length pointing out to him the cause of this improper conduct, it was with the utmost difficulty he could command a serious countenance, while he ordered the servants of the church to take the ape away.



1, ORAN OUTANG. 2, LONG ARMED APE.

Pub.d by Nuttall, Fisher & Dixon, Liverpool 1812.

In the Baboon kind we perceive a more distant approach to the human form; the quadruped mixing in every part of the animal's figure: these generally go upon all-fours; but some, when upright, are as tall as a man; they have short tails, long snouts, and are possessed of brutal fierceness.

The Monkey kind are removed a step further; these are much less than the former, with tails as long, or longer, than their bodies, and flattish faces.

Lastly, the Maki and Oppossum kind, seem to lose all resemblance of the human figure, except in having hands; their noses are lengthened out, like those of quadrupeds, and every part of their bodies totally different from the human; however, as they grasp their food, or other objects, with one hand, which quadrupeds cannot do, this single similitude gives them an air of sagacity, to which they have scarcely any other pretensions.

From this slight survey it may be easily seen that one general description will not serve for animals so very different from each other: nevertheless, it will be fatiguing to the last degree, as their varieties are so numerous, and their differences so small, to go through a particular description of each. In this case it will be best to give a history of the foremost in each class; at the same time marking the distinctions in every species. By this we shall avoid a tedious repetition of similar characters, and consider the manners and the oddities of this fantastic tribe in general points of view; where we shall perceive how nearly they approach to the human figure, and how little they benefit by the approximation. The foremost of the Ape kind is

THE OURAN-OUTANG,

OR WILD MAN OF THE WOODS.

This name seems to have been given to various animals, agreeing in one common character of walking upright, but coming from different countries, and of very different proportions and powers The TROGLODYTE of Bontius, the DRILL of Purchas, and the PIGMY of Tyson, have all received this general name; and have been ranked, by some naturalists, under one general description. If we read the accounts of many remote travellers, under this name we are presented with a formidable animal, from six to eight feet

high; if we examine the books of such as have described it nearer home, we find it a pigmy not above three. In this diversity we must be content to blend their various descriptions into one general account; observing, at the same time, that we have no reason to doubt any of their relations, although we are puzzled which to follow.

The Ouran Outang, which of all other animals most nearly approaches to the human race, is seen of different sizes, from three to seven feet high. In general, however, its stature is less than that of a man; but its strength and agility much greater. Travellers, who have seen various kinds of these animals in their native solitudes, give us surprising relations of their force, their swiftness, their address, and their ferocity. Naturalists, who have observed their form and manners at home, have been as much struck with their patient, pliant, imitative dispositions; with their appearance and conformation, so nearly human. Of the smallest sort of these animals we have had several, at different times, brought into this country, all nearly alike; but that observed by Dr. Tyson is the best known, having been described with the greatest exactness.

The animal which was described by that learned physician, was brought from Angola, in Africa, where it had been taken in the internal parts of the country, in company with a female of the same kind, that died by the way. The body was covered with hair, which was of a coal black colour, more resembling human hair than that of brutes. It bore a still stronger similitude in its different lengths; for in those places where it is longest on the human species it was also longest in this; as on the head, the upper lip, the chin, and the pubes. The face was like that of a man, the forehead larger, and the head round. The upper and lower jaw were not so prominent as in monkeys; but flat, like those of a man. The ears were like those of a man, in most respects; and the teeth had more resemblance to the human than those of any other creature. The bending of the arms and legs were just the same as in a man; and, in short, the animal, at first view, presented a figure entirely human.

In order to discover its differences, it was necessary to take a closer survey; and then the imperfections of its form began to appear. The first obvious difference was in the flatness of the nose; the next in the lowness of the fore-

head, and the wanting the prominence of the chin. The ears were proportionably too large; the eyes too close to each other; and the interval between the nose and mouth too great. The body and limbs differed, in the thighs being too short, and the arms too long; in the thumb being too little, and the palm of the hand too narrow. The feet also were rather more like hands than feet; and the animal, if we may judge from the figure, bent too much upon its haunches.

When this creature was examined anatomically, a surprising similitude was seen to prevail in its internal conformation. It differed from man in the number of its ribs, having thirteen; whereas, in man, there are but twelve. The vertebræ of the neck also were shorter, the bones of the pelvis narrower, the orbits of the eyes were deeper, the kidneys were rounder, the urinary and gall-bladders were longer and smaller, and the ureters of a different figure. Such were the principal distinctions between the internal parts of this animal and those of man; in almost every thing else they were entirely and exactly the same, and discovered an astonishing congruity. Indeed, many parts were so much alike in conformation that it might have excited wonder how they were productive of such few advantages. The tongue, and all the organs of the voice, were the same, and yet the animal was dumb; the brain was formed in the same manner with that of man, and yet the creature wanted reason: an evident proof (as Mr. Buffon finely observes) that no dispositions of matter will give mind; and that the body, how nicely soever formed, is formed in vain, when there is not infused a soul to direct its operations.

Having thus taken a comparative view of this creature with man, what follows may be necessary to complete the general description. This animal was very hairy all behind, from the head downwards; and the hair so thick that it covered the skin almost from being seen: but in all parts before, the hair was much thinner, the skin every where appeared, and in some places it was almost bare. When it went on all-fours, as it was sometimes seen to do, it appeared all hairy; when it went erect it appeared before less hairy, and more like a man. Its hair, which in this particular animal was black, much more resembled

that of men than the fur of brutes: for, in the latter, besides their long hair, there is usually a finer and a shorter intermixed; but in the ouran outang it was all of a kind; only about the pubes the hair was grayish, seemed longer, and somewhat different; as also on the upper lip and chin, where it was grayish like the hair of a beard. The face, hands, and soles, of the feet, were without hair; and so was most part of the forehead: but down the sides of the face the hair was thick, it being there about an inch and a half long, which exceeded that on any other part of the body. In the palms of its hands were remarkable those lines which are usually taken notice of in palmistry; and, at the tips of the fingers, those spiral lines observed in man. The palms of the hands were as long as the soles of the feet; and the toes upon these were as long as the fingers; the middle toe was the longest of all, and the whole foot differed from the human. The hinder feet being thus formed as hands, the animal often used them as such; and, on the contrary, now and then made use of its hands instead of feet. The breasts appeared small and shrivelled, but exactly like those of a man: the navel also appeared very fair, and in exact dispositions, being neither harder nor more prominent that what is usually seen in children. Such is the description of this extraordinary creature; to which little has been added by succeeding observers, except that the colour of the hair is often found to vary; in that described by Edwards it was of a reddish brown.

From a picture so like that of the human species, we are naturally led to expect a corresponding mind; and it is certain, that such of these animals as have been shown in Europe, have discovered a degree of imitation beyond what any quadruped can arrive at.

That of Tyson was a gentle, fond, harmless creature. In its passage to England, those that it knew on ship-board it would embrace with the greatest tenderness, opening their bosoms, and clasping its hands about them. Monkeys of a lower species it held in utter aversion; it would always avoid the place where they were kept in the same vessel; and seemed to consider itself as a creature of higher extraction. After it was taken, and a little used to wear clothes, it grew very fond of them; a part it would put on without any help,

and the rest it would carry in its hands to some of the company, for their assistance. It would lie in a bed, place its head on the pillow, and pull the clothes upwards as a man would do.

That which was seen by Edwards, and described by Buffon, shewed even a superior degree of sagacity. It walked, like all of its kind, upon two legs, even though it carried burdens. Its air was melancholy, and its deportment grave. Unlike the baboon or monkey, whose motions are violent, and appetites capricious, who are fond of mischief, and obedient only from fear, this animal was slow in its motions, and a look was sufficient to keep it in awe. I have seen it, says Mr. Buffoon, give its hand to shew the company to the door: I have seen it sit at table, unfold its napkin, wipe its lips, make use of the spoon and the fork to carry the victuals to its mouth, pour out its drink into a glass, touch glasses when invited, take a cup and saucer and lay them on the table, put in sugar, pour out its tea, leave it to cool before drinking, and all this without any other instigation than the signs or the command of its master, and often of its own accord. It was gentle and inoffensive; it even approached strangers with respect, and came rather to receive caresses than to offer injuries. It was particularly fond of sugared comfits, which every body was ready to give it; and, as it had a defluxion upon the breast, so much sugar contributed to increase the disorder, and shorten its life. It continued at Paris but one summer, and died in London. It ate indiscriminately of all things, but it preferred dry and ripe fruits to all other aliments. It would drink wine, but in small quantities, and gladly left it for milk, tea, or any other sweet liquor.

Such these animals appeared when brought into Europe. However, many of their extraordinary habits were probably the result of education, and we are not told how long the instructions they received for this purpose were continued. But we learn from another account that they take but a very short time to come to a great degree of imitative perfection. Mr. L. Brosse bought two young ones, that were but a year old, from a negro; and these at that early age discovered an astonishing power of imitation.* They even then sat at the

* As quoted by Buffon, vol. xxviii. p. 77.

table like men, ate of every thing without distinction, made use of their knife, spoon, and fork, both to eat their meat and help themselves. They drank wine and other liquors. When carried on ship-board they had signs for the cabin-boys expressive of their wants; and whenever these neglected attending upon them as they desired, they instantly flew into a passion, seized them by the arm, bit them, and kept them down. The male was sea-sick, and required attendance like a human creature; he was twice bled in the arm, and every time afterwards, when he found himself out of order, he shewed his arm, as desirous of being relieved by bleeding.

Pyrard relates, that in the province of Sierra Leona, in Africa, there are a kind of apes, called Baris, which are strong and muscular, and which, if properly instructed when young, serve as very useful domestics. They usually walk upright; they pound at a mortar; they go to the river to fetch water, this they carry back in a little pitcher on their heads; but if care be not taken to receive the pitcher at their return, they let it fall to the ground, and then seeing it broken, they begin to lament and cry for their loss. Le Compte's account is much to the same purpose, of an ape which he saw in the Straits of Molucca. "It walked upon its two hind feet, which is bent a little, like a dog that had been taught to dance. It made use of its hands and arms as we do. Its visage was not much more disagreeable than that of a Hottentot; but the body was all over covered with a woolly hair of different colours. As to the rest, it cried like a child; all its outward actions were so like the human, and the passions so lively and significant, that dumb men could scarcely better express their conceptions and desires. It had also that expression of passion or joy which we often see in children, stamping with its feet, and striking them against the ground, to shew its spite, or when refused any thing it passionately longed for. "Although these animals (continues he) are very big, for that I saw was four feet high, their nimbleness is incredible. It is a pleasure beyond expression to see them run up the tackling of a ship, where they sometimes play as if they had a knack of vaulting peculiar to themselves, or as if they had been paid, like our rope-dancers, to divert the company. Sometimes, suspended by one arm, they poise themselves, and then turn all

of a sudden round about a rope, with as much quickness as a wheel, or a sling put into motion. Sometimes holding the rope successively with their long fingers, and, letting their whole body fall into the air, they run full speed from one end to the other, and come back again with the same swiftness. There is no posture but they imitate, nor motion but they perform, bending themselves like a bow, rolling like a bowl, hanging by the hands, feet, and teeth, according to the different fancies with which their capricious imagination supplies them. But what is still more amazing than all, is their agility to fling themselves from one rope to another, though at thirty, forty, and fifty feet distance."

Such are the habitudes and the powers of the smaller class of these extraordinary creatures; but we are presented with a very different picture in those of a larger stature and more muscular form. The little animals we have been describing, which are seldom found above four feet high, seem to partake of the nature of dwarfs among the human species, being gentle, assiduous, and playful, rather fitted to amuse than terrify. But the gigantic races of the ouran outang, seen and described by travellers, are truly formidable; and in the gloomy forests, where they are only found, seem to hold undisputed dominion. Many of these are as tall or taller than a man; active, strong, and intrepid; cunning, lascivious, and cruel. This redoubtable rival of mankind is found in many parts of Africa, in the East Indies, in Madagascar, and in Borneo.* In the last of these places the people of quality course him as we do the stag; and this sort of hunting is one of the favourite amusements of the king himself. This creature is extremely swift of foot, endowed with extraordinary strength, and runs with prodigious celerity. His skin is all hairy, his eyes sunk in his head, his countenance stern, his face tanned, and all his lineaments, though exactly human, harsh and blackened by the sun. In Africa this creature is even still more formidable. Battel calls him the *pongo*, and assures us that in all his proportions he resembles a man, except that he is much larger, even to a gigantic state. His face resembles that of a man, the eyes deep sunk in the head, the hair on each side extremely long, the visage naked and without

* Le Compte's History of China.

hair, as also the ears and the hands. The body is lightly covered, and scarcely differing from that of a man, except that there are no calves to the legs. Still, however the animal is seen to walk upon his hinder legs, and in an erect posture. He sleeps under trees, and builds himself a hut, which serves to protect him against the sun and the rains of the tropical climates, of which he is a native. He lives only upon fruits, and is no way carnivorous. He cannot speak, although furnished with a greater instinct than any other animal of the brute creation. When the negroes make a fire in the woods, this animal comes near and warms himself by the blaze. However, he has not skill enough to keep the flame alive by feeding it with fuel. They go together in companies, and if they happen to meet one of the human species remote from succour, they shew him no mercy. They even attack the elephant, which they beat with their clubs, and oblige to leave that part of the forest which they claim as their own. It is impossible to take any of these dreadful creatures alive, for they are so strong that ten men would not be a match for but one of them. None of this kind, therefore, are taken except when very young, and these but rarely, when the female happens to leave them behind; for in general they keep clung to the breast, and adhere both with legs and arms. From the same traveller we learn, that when one of these animals dies, the rest cover the body with a quantity of leaves and branches. They sometimes also shew mercy to the human kind. A negro boy, that was taken by one of these, and carried into the woods, continued there a whole year, without receiving any injury.* From another traveller we learn, that these animals often attempt to surprise the female negroes as they go into the woods, and frequently keep them against their wills for the pleasure of their company, feeding them very plentifully all the time. He assures us, that he knew a woman of Loango that had lived among these animals for three years. They grow from six to seven feet high, and are of unequalled strength. They build sheds, and make use of clubs for their defence. Their faces are broad, their noses flat, their ears without a tip, their skins are more bright

* Le Brosse, as quoted by Buffon, vol. xxviii. p. 70.

than that of a mulatto, and they are covered on many parts of the body with long and tawny-coloured hair. Their belly is large, their heels flat, and yet rising behind. They sometimes walk upright, and sometimes upon all-fours, when they are fantastically disposed.

From this description of the ouran outang, we perceive at what a distance the first animal of the brute creation is placed from the very lowest of the human species. Even in countries peopled with savages, this creature is considered as a beast; and in those very places where we might suppose the smallest difference between them and mankind, the inhabitants hold it in the greatest contempt and detestation. In Borneo, where this animal has been said to come to its greatest perfection, the natives hunt it in the same manner as they pursue the elephant or the lion, while its resemblance to the human form procures it neither pity nor protection. The gradations of Nature in the other parts of nature are minute and insensible; in the passage from quadrupeds to fishes we can scarcely tell where the quadruped ends and the fish begins; in the descent from beasts to insects we can hardly distinguish the steps of the progression; but in the ascent from brutes to man, the line is strongly drawn, well marked, and unpassable. It is in vain that the ouran outang resembles man in form, or imitates many of his actions; he still continues a wretched helpless creature, pent up in the most gloomy part of the forest, and, with regard to the provision for his own happiness, inferior even to the elephant or the beaver in sagacity. To us, indeed, this animal seems much wiser than it really is. As we have long been used to measure the sagacity of all actions by their similitude to our own, and not their fitness to the animal's way of living, we are pleased with the imitations of the ape, even though we know they are far from contributing to the convenience of its situation. An ape, or a quadruped, when under the trammels of human education, may be an admirable object for human curiosity, but is very little advanced by all its learning in the road to its own felicity. On the contrary, I have never seen any of these long-instructed animals that did not, by their melancholy air, appear sensible of the wretchedness of their situation. Its marks of seeming sagacity were merely

relative to us, and not to the animal; and all its boasted wisdom was merely of our own making.

There is, in fact, another circumstance relative to this animal, which ought not to be concealed. I have many reasons to believe that the most perfect of the kind are prone, like the rest of the quadruped creation, and only owe their erect attitude to human education. Almost all the travellers who speak of them, mention their going sometimes upon all-fours, and sometimes erect. As their chief residence is among trees, they are without doubt usually seen erect while they are climbing; but it is more than probable that their efforts to escape upon the ground are by running upon the hands and feet together. Schouten, who mentions their education, tells us that they are taken in traps, and taught in the beginning to walk upon their hind legs; which certainly implies that in a state of nature they run upon all-fours. Add to this, that, when we examine the palms of their hands and the soles of their feet, we find both equally callous and beaten; a certain proof that both have been equally used. In those hot countries, where the apes are known to reside, the soles of the negroes' feet, who go bare-foot, are covered with a skin above an inch thick; while their hands are as soft as those of an European. Did the apes walk in the same manner, the same exercise would have furnished them with similar advantages, which is not the case. Besides all this, I have been assured by a very credible traveller, that these animals naturally run in the woods upon all-fours; and when they are taken, their hands are tied behind them, to teach them to walk upright. This attitude they learn after some time; and, thus instructed, they are sent into Europe to astonish the speculative with their near approaches to humanity, while it is never considered how much is natural, and how much has been acquired in the savage schools of Benin and Angola.

The animal next to these, and to be placed in the same class, is the APE, properly so called, or the PITHEKOS of the ancients. This is much less than the former, being not above a foot and a half high, but walks erect, is without a tail, and is easily tamed.

Of this kind also is the GIBBON, so called by Buffon, or the LONG-ARMED APE, which is a very extraordinary and remarkable creature. It is of different sizes, being from four

feet to two feet high. It walks erect, is without a tail, has a face resembling that of a man, with a circle of bushy hair all round the visage; its eyes are large, and sunk in its head; its face tanned, and its ears exactly proportioned. But that in which it chiefly differs from all others of the monkey tribe, is the extraordinary length of its arms, which when the animal stands erect are long enough to reach the ground; so that it can walk upon all-fours, and yet keep its erect posture at the same time. This animal, next to the ouran outang and the ape, most nearly resembles mankind, not only in form, but in gentle manners and tractable disposition. It is a native of the East Indies, and particularly found along the coasts of Coromandel.

The last of the ape kind is the CYNOCEPHALUS, or the MAGOT of Buffon. This animal wants a tail, like the former, although there is a small protuberance at that part, which yet is rather formed by the skin than the bone. It differs also in having a large callous red rump. The face is prominent, and approaches more to that of quadrupeds than of man. The body is covered with a brownish hair, and yellow on the belly. It is about three feet and a half, or four feet high, and is a native of most parts of Africa and the East. As it recedes from man in its form, so also it appears different in its dispositions, being sullen, vicious, and untractable.*

THE BABOON.

DESCENDING from the more perfect of the monkey kinds, we come to the baboon and its varieties, a large, fierce, and formidable race, that, mixing the figure of the man and the quadruped in their conformation, seem to possess only the defects of both; the petulance of the one, and the ferocity of the other. These animals have a short tail; a prominent face; with canine teeth, larger than those of men; and callosities on the rump.† In man the physiognomy may deceive, and the figure of the body does not always lead to the qualities of the mind; but in animals

* Omnes femellæ hujusce et precedentium, ut et fere sequentium specierum, menstruali patiuntur fluxu sicut in feminis.

† Buffon, vol. xxxviii. p. 183.

we may always judge of their dispositions by their looks, and form a just conjecture of their internal habits from their external form. If we compare the nature of the ape and the baboon by this easy rule, we shall at once be led to pronounce that they greatly differ in their dipositions, and that the latter are infinitely more fierce, savage, and malicious, than the former. The ouran outang, that so nearly resembles man in its figure, approaches also nearest in the gentleness of its manners and the pliancy of its temper. The cynocephalus, that of all other apes is most unlike man in form, and approaches nearer the dog in face, resembles also the brute in nature, being wild, restless, and impelled by a fretful impetuosity. But the baboon, who is still more remote, and resembles man only in having hands, who, from having a tail, a prominent face, and sharp claws, approaches more nearly to the savage tribe, is every way fierce, malicious, ignorant, and untractable.

The BABOON, properly so called, is from three to four feet high, very strong built, with a thick body and limbs, and canine teeth, much longer than those of men. It has large callosities behind, which are quite naked and red. Its tail is crooked and thick, and about seven or eight inches long. Its snout, for it can hardly be called a face, is long and thick, and on each side of its cheeks it has a pouch, into which, when satiated with eating, it puts the remainder of its provisions. It is covered with long thick hair, of a reddish brown colour, and pretty uniform over the whole body. It walks more commonly upon all-fours than upright, and its hands as well as its feet are armed with long sharp claws, instead of the broad round nails of the ape kind.

An animal thus made for strength, and furnished with dangerous weapons, is, found, in fact, to be one of the most formidable of the savage race in those countries where it is bred. It appears, in its native woods, to be impelled by two opposite passions; a hatred for the males of the human species, and a desire for women. Were we assured of these strange oppositions in its disposition from one testimony alone, the account might appear doubtful; but, as it comes from a variety of the most credible witnesses, we cannot refuse our assent. From them, therefore, we learn, that these animals will often assail women in a body, and force them

into the woods, where they keep them against their will, and kill them when refractory. From the Chevalier Forbin we learn, that in Siam whole troops of these will often sally forth from their forests, and attack a village, when they know the men are engaged in their rice harvest. They are on such occasions actuated as well by desire as by hunger; and not only plunder the houses of whatever provisions they can find, but endeavour to force the women. These, however, as the Chevalier humorously relates, not at all liking either the manners or the figure of the paltry gallants, boldly stand on their defence, and with clubs, or whatever other arms they can provide, instead of answering their caresses, oblige their ugly visitors to retreat; not, however, before they have damaged or plundered every thing eatable they can lay their hands on.

At the Cape of Good Hope, they are less formidable, but, to the best of their power, equally mischievous. They are there under a sort of natural discipline, and go about whatever they undertake with surprising skill and regularity. When they set about robbing an orchard or a vineyard, for they are extremely fond of grapes, apples, and ripe fruit, they do not go singly to work, but in large companies, and with preconcerted deliberation. On these occasions, a part of them enter the enclosure, while one is set to watch. The rest stand without the fence, and form a line reaching all the way from their fellows within, to their rendezvous without, which is generally in some craggy mountain. Every thing being thus disposed, the plunderers within the orchard throw the fruit to those that are without as fast as they can gather it; or, if the wall or hedge be high, to those that sit on the top; and these hand the plunder to those next them on the other side. Thus the fruit is pitched from one to another all along the line, till it is safely deposited at their head-quarters. They catch it as readily as the most skilful tennis-player can a ball; and while the business is going forward, which they conduct with great expedition, a most profound silence is observed among them. Their sentinel, during this whole time, continues upon the watch, extremely anxious and attentive; but, if he perceives any one coming, he instantly sets up a loud cry, and at this signal the whole company scamper off. Nor yet are they at any time willing to leave the place

empty-handed; for if they be plundering a bed of melons, for instance, they go off with one in their mouths, one in their hands, and one under their arm. If the pursuit is hot, they drop first that from under their arm, then that from their hand; and, if it be continued, they at last let fall that which they had hitherto kept in their mouths.

The natives of the Cape often take the young of these animals, and, feeding them with sheep and goat's milk, accustom them to guard their houses; which duty they perform with great punctuality. Those, however, that have been brought into Europe, are headstrong, rude, and untractable. Dogs and cats, when they have done any thing wrong, will run off; but these seem careless and insensible of the mischief they do; and I have seen one of them break a whole table of china, as it should seem by design, without appearing in the least conscious of having done amiss. It was not, however, in any respect so formidable as that described by Mr. Buffon, of which he gives the following description:—"It was not," says he, "extremely ugly, and yet it excited horror. It continually appeared in a state of savage ferocity, gnashing its teeth, flying at the spectators, and furiously restless. It was obliged to be confined in an iron cage, the bars of which it so forcibly attempted to break, that the spectators were struck with apprehension. It was a sturdy bold animal, whose short limbs and powerful exertions shewed vast strength and agility. The long hair with which it was covered seemed to add to its apparent abilities; which, however, were in reality so great, that it could easily overcome a single man, unless armed. As to the rest, it for ever appeared excited by that passion which renders the mildest animals at intervals furious. Its lasciviousness was constant, and its satisfactions particular. Some others also of the monkey kind shewed the same degree of impudence, and particularly in the presence of women; but, as they were less in size, their petulance was less obvious, and their insolence more easily corrected."

But however violent the desires of these animals may be, they are not found to breed in our climate. The female brings forth usually but one at a time, which she carries in her arms, and in a peculiar manner clinging to her breast. As to the rest, these animals are not at all carnivorous;

they principally feed upon fruits, roots, and corn, and generally keep together in companies. The internal parts are more unlike those of man than of quadrupeds, particularly the liver, which is, like that of a dog, divided into six lobes. The lungs are more divided, the guts in general are shorter, and the kidneys rounder and flatter.

The largest of the baboon kind is the MANDRIL; an ugly disgusting animal, with a tail shorter than the former, though of a much larger stature, being from four to five feet high. The muzzle is still longer than that of the preceding, it is of a bluish colour, and strongly marked with wrinkles, which give it a frightful appearance. But what renders it truly loathsome is, that from the nose there is always seen issuing a snot, which the animal takes care at intervals to lick off with its tongue, and swallow. It is a native of the Gold Coast; it is said to walk more frequently erect than upon all-fours; and, when displeased, to weep like a child. There was one of them shown in England some years ago. It seemed tame, but stupid, and had a method of opening its mouth and blowing at such as came too near.

The WANDEROW is a baboon rather less than the former, with the body less compact and muscular, and the hinder parts seemingly more feeble. The tail is from seven to eight inches long; the muzzle is prominent, as in the rest of this kind; but what particularly distinguishes it, is a large long white head of hair, together with a monstrous white beard, coarse, rough, and descending; the colour of the rest of the body being brown or black. As to the rest, in its savage state, it is equally fierce with the others; but, with a proper education, it seems more tractable than most of its kind, and is chiefly seen in the woods of Ceylon and Malabar.

The MAIMON of Buffon, which Edwards calls the PIGTAIL, is the last of the baboons, and in size rather approaches the monkey, being no larger than a cat. Its chief distinction, besides its prominent muzzle, like a baboon, is in the tail, which is about five or six inches long, and curled up like that of a hog; from which circumstance, peculiar to this animal, our English naturalist gave it the name. It is a native of Sumatra, and does not well endure the rigours of our climate. Edwards, however, kept one of them a year in

London; and another of them happening at the same time to be exposed in a show of beasts, he brought the two exiles together, to see if they would claim or acknowledge their kindred. The moment they came into each other's presence, they testified their mutual satisfaction, and seemed quite transported at the interview.

THE MONKEY.

The varieties in the larger tribes of the monkey kind are but few; in the ape we have seen but four, and in the baboon about as many. But when we come to the smaller class, the differences among them seem too tedious for enumeration. These, as was observed in the beginning, are all small in stature, and with long tails, by which they are distinguished from the preceding, that entirely want the tail, or are large, and have but a short one. The varieties in the form and colour of dogs, or squirrels, is nothing to what are found among monkeys of the smaller kind. Bosman mentions above fifty sorts on the Gold Coast alone, and Smith confirms the account. Condamine asserts that it would take up a volume to describe the differences of these to be found along the river Amazons; and we are sure that every one of these is very different from those on the African coast. Naturalists, however, have undertaken to make a catalogue of their numbers; and they either transmit their descriptions from one to another, or only enumerate those few that have found their way to Europe, and have fallen within the narrow circle of their own observation. But, though it may be proper enough to describe such as fall under notice, it is certainly wrong to offer a scanty catalogue as complete, and to induce the reader to suppose he sees a picture of the whole group of these animals, when he is only presented with a small part of the number. Such, therefore, as are fond of the reputation of adding new descriptions to the stock of natural history, have here a wide, though surely a barren, field to enlarge in; and they will find it no difficult matter, by observing the various animals of this kind that are from time to time brought from their native coasts to this country, to indulge in description, and to ring the changes upon all the technical terms with which this most pleasing science



T. Dixon, sc

1. MANDRIL. 2. WANDEROW. 3. MALBROUCK.

4. SAKI. 5. MICO.

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is obscured and rendered disgusting. For my own part, I will spare the reader and myself the trouble of entering into an elaborate description of each; content with observing once more, that their numbers are very great, and their differences very trifling. There is scarcely a country in the tropical climates that does not swarm with them, and scarcely a forest that is not inhabited by a race of monkeys distinct from all others. Every different wood along the coasts of Africa may be considered as a separate colony of monkeys, differing from those of the next district in colour, in size, and malicious mischief. It is indeed remarkable, that the monkeys of two cantons are never found to mix with each other, but rigorously to observe a separation: each forest produces only its own; and these guard their limits from the intrusion of all strangers of a different race from themselves. In this they somewhat resemble the human inhabitants of the savage nations among whom they are found, where the petty kingdoms are numerous, and their manners opposite. There, in the extent of a few miles, the traveller is presented with men speaking different languages, professing different religions, governed by different laws, and only resembling each other in their mutual animosity.

In general, monkeys of all kinds, being less than the baboon, are endued with less powers of doing mischief. Indeed, the ferocity of their nature seems to diminish with their size; and when taken wild in the woods, they are sooner tamed, and more easily taught to imitate man, than the former. More gentle than the baboon, and less grave and sullen than the ape, they soon begin to exert all their sportive mimicries, and are easily restrained by correction. But it must be confessed that they will do nothing they are desired without beating; for, if their fears be entirely removed, they are the most insolent and headstrong animals in nature.

In their native woods they are not less the pests of man than of other animals. The monkeys, says a traveller,* are in possession of every forest where they reside, and may be considered as the masters of the place. Neither the tiger, nor the lion itself, will venture to dispute the dominion, since these, from the tops of trees, continually carry on

* Description Historique de Macacar, p. 51.

offensive war, and by their agility escape all possibility of pursuit. Nor have the birds less to fear from their continual depredations; for, as these harmless inhabitants of the wood usually build upon trees, the monkeys are for ever on the watch to find out and rob their nests; and such is their petulant delight in mischief, that they will fling their eggs against the ground, when they want appetite or inclination to devour them.

There is but one animal in all the forest that ventures to oppose the monkey, and that is the serpent. The larger snakes are often seen winding up the trees where the monkeys reside; and, when they happen to surprise them sleepping, swallow them whole, before the little animals have time to make a defence. In this manner, the two most mischievous kinds in all nature keep the whole forest between them; both equally formidable to each other, and for ever employed in mutual hostilities. The monkeys, in general, inhabit the tops of the trees, and the serpents cling to the branches nearer the bottom, and in this manner they are for ever seen near each other, like enemies in the same field of battle. Some travellers, indeed, have supposed that their vicinity rather argued their mutual friendship, and that they united in this manner to form an offensive league against all the rest of animated nature.* "I have seen these monkeys," says Labat, "playing their gambols upon those very branches on which the snakes were reposing, and jumping over them without receiving any injury, although the serpents of that country were naturally vindictive, and always ready to bite whatever disturbed them." These gambols, however, were probably nothing more than the insults of an enemy that was conscious of its own safety; and the monkeys might have provoked the snake in the same manner as we often see sparrows twitter at a cat. However this be, the forest is generally divided between them; and these woods, which nature seems to have embellished with her richest magnificence, rather inspire terror than delight, and chiefly serve as retreats for mischief and malignity.

The enmity of these animals to mankind is partly ridiculous, and partly formidable. They seem, says Le Compte and others, to have a peculiar instinct in discovering their

* Labat, Relat. de l'Afriq. Occident, p. 317.

foes, and are perfectly skilled, when attacked, in mutually defending and assisting each other. When a traveller enters among these woods, they consider him as an invader upon their dominions, and all join to repel the intrusion. At first they survey him with a kind of insolent curiosity. They jump from branch to branch, pursue him as he goes along, and make a loud clattering, to call the rest of their companions together. They begin their hostilities by grinning, threatening, and flinging down the withered branches at him, which they break from the trees; they even take their excrements in their hands, and throw them at his head. Thus they attend him wherever he goes; jumping from tree to tree with such amazing swiftness, that the eye can scarcely attend their motions. Although they take the most desperate leaps, yet they are seldom seen to come to the ground, for they easily fasten upon the branches that break their fall, and stick, either by their hands, feet, or tail, wherever they touch. If one of them happens to be wounded, the rest assemble round, and clap their fingers into the wound, as if they were desirous of sounding its depth. If the blood flows in any quantity, some of them keep it shut up, while others get leaves, which they chew, and thrust into the opening: however extraordinary this may appear, it is asserted to be often seen, and to be strictly true. In this manner they wage a petulant, unequal war; and are often killed in numbers before they think proper to make a retreat. This they effect with the same precipitation with which they at first came together. In this retreat the young are seen clinging to the back of the female, with which she jumps away, seemingly unembarrassed by the burden.

The curiosity of the Europeans has, in some measure, induced the natives of the places where these animals reside to catch or take them alive by every art they are able. The usual way in such case is to shoot the female as she carries her young, and then both, of course, tumble to the ground. But even this is not easily performed; for if the animal be not killed outright it will not fall; but clinging to some branch, continues, even when dead, its former grasp, and remains on the tree where it was shot until it drops off by putrefaction: in this manner it is totally lost to the pursuer; for to attempt climbing the tree, to bring either it or the young one down, would probably be fatal, from the number of

serpents that are hid among the branches. For this reason the sportsman always takes care to aim at the head; which, if he hits, the monkey falls directly to the ground; and the young one comes down at the same time, clinging to its dead parent.

The Europeans along the coasts of Guinea often go into the woods to shoot monkeys; and nothing pleases the negroes more than to see those animals drop, against which they have the greatest animosity. They consider them, and not without reason, as the most mischievous and tormenting creatures in the world; and are happy to see their numbers destroyed, upon a double account; as well because they dread their devastations, as because they love their flesh. The monkey, which is always skinned before it is eaten, when served up at a negro feast, looks so like a child, that an European is shocked at the very sight. The natives, however, who are not so nice, devour it as one of the highest delicacies; and assiduously attend our sportsmen to profit by the spoil. But what they are chiefly astonished at, is to see our travellers carefully taking the young ones alive, while they leave them the old ones, that are certainly the most fit to be eaten. They cannot comprehend what advantage can arise to us from educating or keeping a little animal, that, by experience, they know to be equally fraught with tricks and mischief: some of them have even been led to suppose, that, with a kind of perverse affection, we love only creatures of the most mischievous kinds: and having seen us often buy young and tame monkeys, they have taken equal care to bring rats to our factors, offering them for sale, and greatly disappointed at finding no purchaser for so hopeful a commodity.*

The negroes consider these animals as their greatest plague; and, indeed, they do incredible damage when they come in companies to lay waste a field of Indian corn, or rice, or a plantation of sugar-canes. They carry off as much as they are able; and they destroy ten times more than they bear away. Their manner of plundering is pretty much like that of the baboons, already mentioned, in a garden. One of them stands sentinel upon a tree, while the rest are plundering, carefully and cautiously turning on every side,

* Labat, Relat. de l'Afric. Occident, p. 317.

but particularly to that on which there is the greatest danger: in the mean time, the rest of the spoilers pursue their work with great silence and assiduity; they are not contented with the first blade of corn, or the first cane that they happen to lay their hands on; they first pull up such as appear most alluring to the eye; they turn it round, examine, compare it with others, and if they find it to their mind, stick it under one of their shoulders. When in this manner they have got their load, they begin to think of retreating: but if it should happen that the owners of the field appear to interrupt their depredations, their faithful sentinel instantly give notice by crying out, *Houp, houp, houp!* which the rest perfectly understand, and all at once throwing down the corn they hold in their left hands, scamper off upon three legs, carrying the remainder in the right. If they are still hotly pursued, they then are content to throw down their whole burden, and to take refuge among their woods, on the tops of which they remain in perfect security.

Were we to give faith to what some travellers assure us, of the government, policies, and subordination of these animals, we might perhaps be taxed with credulity; but we have no reason to doubt that they are under a kind of discipline, which they exercise among each other. They are generally seen to keep together in companies, to march in exact order, and to obey the voice of some particular chieftain, remarkable for his size and gravity. One species of these, which Mr. Buffon calls the OUARINE, and which are remarkable for the loudness and the distinctness of their voice, are still more so for the use to which they convert it. "I have frequently been a witness," says Margrave, "of their assemblies and deliberations. Every day, both morning and evening, the ouarines assemble in the woods to receive instructions. When all come together, one among the number takes the highest place on a tree, and makes a signal with his hand to the rest to sit round, in order to hearken. As soon as he sees them placed, he begins his discourse, with so loud a voice, and yet in a manner so precipitate, that, to hear him at a distance, one would think the whole company were crying out at the same time: however, during that time, one only is speaking; and all the rest observe the most profound silence.

When this has done, he makes a sign with the hand for the rest to reply; and at that instant they raise their voices together, until by another signal of the hand they are enjoined silence. This they as readily obey; till, at last, the whole assembly breaks up, after hearing a repetition of the same preachment."

The chief food of the monkey tribe is fruits, the buds of trees, or succulent roots and plants. They all, like man, seem fond of sweets; and particularly the pleasant juice of the palm-tree and the sugar-cane. With these the fertile regions in which they are bred seldom fail to supply them; but when it happens that these fail, or that more nourishing food becomes more agreeable, they eat insects and worms; and sometimes, if near the coasts, descend to the sea-shore, where they eat oysters, crabs, and shell-fish. Their manner of managing an oyster is extraordinary enough; but it is too well attested to fail of our assent. As the oysters in the tropical climates are generally larger than with us, the monkeys, when they go to the sea-side, pick up a stone, and clap it between the opening shells; this prevents them from closing; and the monkey then eats the fish at his ease. They often also draw crabs from the water, by putting their tail to the hole where that animal takes refuge, and the crab fastening upon it, they withdraw it with a jerk, and thus pull their prey upon shore. This habit of laying traps for other animals makes them very cautious of being entrapped themselves; and I am assured, by many persons of credit, that no snare, how nicely baited soever, will take the monkey of the West India islands; for having been accustomed to the cunning of man it opposes its natural distrust to human artifice.

The monkey generally brings forth one at a time, and sometimes two. They are rarely found to breed when brought over into Europe; but of those that do, they exhibit a very striking picture of parental affection. The male and female are never tired of fondling their young one. They instruct it with no little assiduity; and often severely correct it, if stubborn, or disinclined to profit by their example: they hand it from one to the other; and when the male has done shewing his regard, the female, takes her turn. When wild in the woods, the female, if she happens to have two, carries one on her back, and the other

in her arms: that on her back clings very closely, clasping its hands round her neck, and its feet about her middle: when she wants to suckle it, she then alters their position; and that which has been fed gives place to the other, which she takes in her arms. It often happens that she is unable to leap from one tree to another, when thus loaden; and upon such occasions their dexterity is very surprising. The whole family form a kind of chain, locking tail in tail, or hand in hand, and one of them holding the branch above, the rest swing down, balancing to and fro, like a pendulum, until the undermost is enabled to catch hold of the lower branches of some neighbouring tree. When the hold is fixed below, the monkey lets go that which was above, and thus comes undermost in turn; but, creeping up along the chain, attains the next branches, like the rest; and thus they all take possession of the tree, without ever coming to the ground.

When in a state of domestic tameness, those animals are very amusing, and often fill up a vacant hour, when other entertainment is wanting. There are few that are not acquainted with their various mimicries, and their capricious feats of activity. But it is generally in company with other animals of a more simple disposition that their tricks and superior instincts are shown; they seem to take a delight in tormenting them; and I have seen one of them amusing itself for hours together, in imposing upon the gravity of a cat. Erasmus tells us of a large monkey, kept by Sir Thomas More, that, one day diverting itself in his garden, where some tame rabbits were kept, played several of its usual pranks among them, while the rabbits scarcely well knew what to make of their new acquaintance: in the mean time, a weasel, that came for very different purposes than those of entertainment, was seen peering about the place in which the rabbits were fed, and endeavouring to make its way, by removing a board that closed their hutch. While the monkey saw no danger, it continued a calm spectator of the enemy's effort; but just when, by long labour, the weasel had effected its purpose, and had removed the board, the monkey stept in, and, with the utmost dexterity, fastened it again in its place; and the disappointed weasel was too much fatigued to renew its operations. To this I will only add what Father Carli, in

his history of Angola, assures us to be true. In that horrid country, where he went to convert the savage natives to Christianity, and met with nothing but distress and disappointment; while his health was totally impaired by the raging heats of the climate, his patience exhausted by the obstinacy of the stupid natives, and his little provisions daily plundered, without redress, in such an exigency he found more faithful services from the monkeys than the men; these he had taught to attend him, to guard him whilst sleeping, against thieves and rats, to comb his head, to fetch his water; and he asserts, that they were even more tractable than the human inhabitants of the place. It is indeed remarkable, that in those countries where the men are most barbarous and stupid, the brutes are most active and sagacious. It is in the torrid tracts, inhabited by barbarians, that such various animals are found with instinct so nearly approaching reason. The savages, both of Africa and America, accordingly suppose monkeys to be men; idle, slothful, rational beings; capable of speech and conversation; but obstinately dumb, for fear of being compelled to labour.

As of all savages, those of Africa are the most brutal, so, of all countries, the monkeys of Africa are the most expert and entertaining. The monkeys of America are, in general, neither so sagacious nor so tractable, nor is their form so nearly approaching that of man. The monkeys of the new continent may be very easily distinguished from those of the old, by three marks. Those of the ancient continent are universally found to have a naked callous substance behind, upon which they sit; which those of America are entirely without: those also of the ancient continent have the nostrils differently formed, more resembling those of men, the holes opening downward; whereas the American monkeys have them opening on each side: those of the ancient world have pouches on each side the jaw, into which they put their provisions; which those of America are without: lastly, none of the monkeys of the ancient continent hang by the tail, which many of the American sorts are known to do. By these marks the monkeys of either continent may be readily distinguished from each other, and prized accordingly. The African monkey, as I am assured, requires a longer education, and more cor-

rection, than that of America; but it is at last found capable of more various powers of imitation, and shews a greater degree of cunning and activity.

Mr. Buffon, who has examined this race of imitative beings with greater accuracy than any other naturalist before him, makes but nine species of monkeys belonging to the ancient continent; and eleven belonging to the new. To all these he gives the names which they go by in their respective countries; which, undoubtedly, is the method least liable to error, and the most proper for imitation.

Of the monkeys of the ancient continent, the first he describes is the MACAGUO; somewhat resembling a baboon in size, strength of body, and a hideous wrinkled visage: it differs, however, in having a very long tail, which is covered with tufted hair. It is a native of Congo.

The second is the PATAS, which is about the same size with the former; but differs in having a longer body, and a face less hideous: it is particularly remarkable for the colour of his hair, which is of a red, so brilliant, that the animal looks as if it were actually painted. It is usually brought from Senegal; and by some called the *red African monkey*.

The third of the ancient continent is the MALBROUK; of which he supposes the monkey which he calls the BONET CHINOIS to be a variety. The one is remarkable for a long tail, and long beard; the other, for a cap of hair that covers the crown of the head, from whence it takes the name. Both are natives of the East Indies; and the Bramins, who extend their charity to all the brute creation, have hospitals for such of them as happen to be sick, or otherwise disabled.

The fourth of this kind is the MANGABEY; it may be distinguished from all others by its eye-lids, which are naked, and of a striking whiteness. It is a native of Madagascar.

The fifth is the MONA, or the CEPHUS of the ancients: it is distinguished by its colour, which is variegated with black and red; and its tail is of an ash colour, with two white spots on each side at its insertion. It is a native of the northern parts of Africa.

The sixth is the CALLITRIX, or GREEN MONKEY of St. Iago; distinguished by its beautiful green colour on the back, its white breast and belly, and its black face.

The seventh is the MOUSTOC, or WHITE NOSE; distinguished by the whiteness of its lips, from whence it has received its name, the rest of the face being of a deep blue. It is a native of the Gold Coast, and a very beautiful little animal.

The eighth is the TALAPOIN; and may be distinguished as well by its beautiful variety of green, white, and yellow hair, as by that under the eyes being of a greater length than the rest. It is supposed to be a native of Africa and the East.

The ninth and last of the monkeys of the ancient continent, is the DOUC, so called in Cochin-China, of which country it is a native. The douc seems to unite the characters of all the former together: with a long tail, like the monkey; of a size as large as the baboon; and with a flat face like the ape: it even resembles the American monkeys, in having no callosity on its posteriors. Thus it seems to form the shade by which the monkeys of one continent are linked with those of the other.

Next come the monkeys of the new continent; which, as has been said, differ from those of the old, in the make of their nostrils, in their having no callosity on their posteriors, and in their having no pouches on each side of the jaw. They differ also from each other, a part of them making no use of their tails to hang by; while others of them have the tail very strong and muscular, and serving by way of a fifth hand to hold by. Those with muscular holding tails, are called SAPAJOUS; those with feeble useless tails, are called SAGOINS. Of the sapajous there are five sorts: of the sagoins there are six.

The first of the sapajous is the WARINE, or the BRAZILIAN GUARIBA. This monkey is as large as a fox, with black long hair, and remarkable for the loudness of its voice. It is the largest of the monkey kind to be found in America.

The second is the COATI; which may be distinguished from the rest by having no thumb, and consequently but four fingers on the two fore-paws. The tail, however, supplies the defects of the hand; and with this the animal slings itself from one tree to another, with surprising rapidity.

The third is the SAJOU; distinguished from the rest of the sapajous by its yellowish flesh-coloured face.

The fourth is the SAI. It is somewhat larger than the sajou, and has a broader muzzle. It is called also the BEWAILER, from its peculiar manner of lamenting when either threatened or beaten.

The fifth and last of the sapajou kind, or monkeys that hold by the tail, is the SAMARI, or AURORA; which is the smallest and most beautiful of all. It is of a fine orange colour, with two circles of flesh round the eyes. It is a very tender, delicate animal, and held in high price.

Of the sagoins with feeble tails there are six kinds. The first and the largest is the SAKI, or CAGUI; so remarkable for the length of the hair on its tail, that it has been often termed the FOX-TAILED MONKEY. It is of different sizes; some being twice as large as others.

The second of this kind is the TAMAIN; which is usually black, with the feet yellow. Some, however, are found all over brown, spotted with yellow.

The third is the WISTITI; remarkable for the large tufts of hair upon its face, and its annulated tail.

The fourth is the MARIKINA; with a mane round the neck, and a bunch of hair at the end of the tail, like a lion.

The fifth is called the PINCH; with the face of a beautiful black, and white hair that descends on each side of the face, like that of man.

The last, least, and most beautiful of all, is the MICO, an animal too curiously adorned not to demand a particular description; which is thus given of it by Mr. Condamine:—"That," says he, "which the governor of Para made me a present of, was the only one of its kind that was seen in the country. The hair on its body was of a beautiful silver colour, brighter than that of the most venerable human hair; while the tail was of a deep brown, inclining to blackness. It had another singularity more remarkable than the former; its ears, its cheeks, and lips, were tinctured with so bright a vermilion, that one could scarcely be led to suppose that it was natural. I kept it a year; and it was still alive when I made this description of it, almost within sight of the coasts of France: all I could then do was to preserve it in spirits of wine, which might serve to keep it in such a state as to shew that I did not in the least exaggerate in my description."

OF THE MAKI.

The last of the monkey kind are the makies; which have no other pretensions to be placed in this class, except that of having hands like the former, and making use of them to climb trees, or to pluck their food. Animals of the hare kind, indeed, are often seen to feed themselves with their fore-paws, but they can hold nothing in one of them singly, and are obliged to take up whatever they eat in both at once: but it is otherwise with the maki; as well as the monkey kinds, they seize their food with one hand, pretty much like a man, and grasp it with great ease and firmness. The maki, therefore, from this conformation in its hands both before and behind, approaches nearly to the monkey kind; but in other respects, such as the make of the snout, the form of the ears, and the parts that distinguish the sexes, it entirely differs from them. There are many different kinds of these animals; all varying from each other in colour or size, but agreeing in the human-like figure of their hands and feet, and in their long nose, which somewhat resembles that of a dog. As most of these are bred in the depths of the forest, we know little more concerning them than their figure. Their way of living, their power of pursuit and escape, can only be supposed, from the analogy of their conformation, somewhat to resemble those of the monkey.

The first of this kind is the MOCOCO; a beautiful animal, about the size of a common cat, but the body and limbs slenderer, and of a longer make. It has a very long tail, at least double the length of its body; it is covered with fur, and marked alternately with broad rings of black and white. But what it is chiefly remarkable for, besides the form of its hands and feet, is the largeness of its eyes, which are surrounded with a broad black space; and the length of the hinder legs, which by far exceed those before. When it sleeps, it brings its nose to its belly, and its tail over its head. When it plays, it uses a sort of galloping, with its tail raised over its back, which keeps continually in motion. The head is covered with dark ash-coloured hair; the back and sides with a red ash-colour, and not so dark as on the head; and the whole glossy, soft, and delicate, smooth to the touch, and standing almost upright like the pile of velvet.

It is a native of Madagascar; appears to be a harmless gentle animal; and though it resembles the monkey in many respects, yet it has neither its malice nor its mischief: nevertheless, like the monkey, it seems to be always in motion; and moves, like all four-handed animals, in an oblique direction.

A second of this kind, which is also a native of Madagascar, is the MONGOZ; which is less than the former; with a soft glossy robe, but a little curled. The nose also is thicker than that of the mococo; the eyes are black, with orange-coloured circles round the pupil; and the tail is of one uniform colour. As to the rest, it is found of various colours; some being black, others brown; and its actions somewhat resemble those of a monkey.

The VARI is much larger than either of the former; its hair is much longer, and it has a kind of ruff round the neck, consisting of very long hair, by which it may be easily distinguished from the rest. It differs also in its disposition, which is fierce and savage; as also in the loudness of its voice, which somewhat resembles the roaring of the lion. This also is a native of Madagascar.

To this tribe we may refer a little four-handed animal, of the island of Ceylon, which Mr. Buffon calls the LORI; very remarkable for the singularity of its figure. This is, of all other animals, the longest in proportion to its size; having nine vertebræ in the loins; whereas other quadrupeds have only seven.* The body appears still the longer by having no tail. In other respects, it resembles those of the Maki kind; as well in its hands and feet, as in its snout, and in the glossy qualities of its hair. It is about the size of a squirrel; and appears to be a tame, harmless little animal.

OF THE OPPOSSUM, AND ITS KINDS.

To these four-handed animals of the ancient continent, we may add the four-handed animals of the new, that use their hands like the former, as well as their tails, and that fill up the chasm between the monkey tribe and the lower orders of the forest. As the Maki kind, in some measure,

* Buffon, vol. xxvi. p. 274.

seem to unite the fox and the monkey in their figure and size, so these seem to unite the monkey and the rat. They are all less than the former; they have long tails, almost bare of hair; and their fur, as well as their shape, seems to place them near the rat kind. Some have accordingly ranked them in that class; but their being four-handed is a sufficient reason for placing them in the rear of the monkeys.

The first, and the most remarkable of this tribe is the OPPOSSUM, an animal found both in North and South America, of the size of a small cat. The head resembles that of a fox; it has fifty teeth in all, but two great ones in the midst like those of a rat. The eyes are little, round, clear, lively, and placed upright; the ears are long, broad, and transparent, like those of the rat kind; its tail also increases the similitude, being round, long, a little hairy in the beginning, but quite naked towards the end. The fore-legs are short, being about three inches long; while those behind are about four. The feet are like hands, each having five toes or fingers with white crooked nails, and rather longer behind than before. But it is particular in this animal, that the thumb on the hinder legs wants a nail; whereas the fingers are furnished with clawed nails as usual.

But that which distinguishes this animal from all others, and what has excited the wonder of mankind for more than two centuries, is the extraordinary conformation of its belly, as it is found to have a false womb, into which the young, when brought forth in the usual manner, creep, and continue for some days longer, to lodge and suckle securely. This bag, if we may so call it, being one of the most extraordinary things in natural history, requires a more minute description. Under the belly of the female is a kind of slit or opening, of about three inches long; this opening is composed of a skin, which makes a bag internally, that is covered on the inside with hair, and in this bag are the teats of the female; and into it the young, when brought forth, retire, either to suckle or to escape from danger. This bag has a power of opening and shutting, at the will of the animal; and this is performed by means of several muscles, and two bones, that are fitted for this purpose, and that are peculiar to this animal only. These bones are placed before the

os pubis, to which they are joined at the base; they are about two inches long, and grow smaller and smaller to their extremities. These support the muscles that serve to open the bag, and give them a fixture. To these muscles there are antagonists, that serve in the same manner to shut the bag; and this they perform so exactly, that in the living animal the opening can scarcely be discerned, except when the sides are forcibly drawn asunder. The inside of this bag is furnished with glands that exude a musky substance, which communicates to the flesh of the animal, and renders it unfit to be eaten. It is not to be supposed that this is the place where the young are conceived, as some have been led to imagine; for the oppossum has another womb, like that of the generality of animals, in which generation is performed in the ordinary manner. The bag we have been describing may rather be considered as a supplemental womb. In the real womb, the little animal is partly brought to perfection; in the ordinary one, it receives a kind of additional incubation; and acquires, at last, strength enough to follow the dam wherever she goes. We have many reasons to suppose that the young of this animal are all brought forth prematurely, or before they have acquired that degree of perfection which is common in other quadrupeds. The little ones, when first produced, are in a manner but half completed; and some travellers assert, that they are at that time not much larger than flies. We are assured also, that immediately on quitting the real womb they creep into the false one; where they continue fixed to the teat, until they have strength sufficient to venture once more into the open air, and share the fatigues of the parent. Ulloa assures us, that he has found five of these little creatures hidden in the belly of the dam three days after she was dead, still alive, and all clinging to the teat with great avidity. It is probable, therefore, that upon their first entering the false womb, they seldom stir out from thence; but when more advanced, they venture forth several times in the day, and at last seldom make use of their retreat, except in cases of necessity or danger. Travellers are not agreed in their accounts of the time which these animals take to continue in the false womb; some assure us they remain there for several weeks; and others, more precisely, mention a month. During this period of strange gestation there is no difficulty

in opening the bag in which they are concealed; they may be reckoned, examined, and handled, without much inconvenience; for they keep fixed to the teat, and cling there as firm as if they made a part of the body of the animal that bears them. When they are grown stronger, they drop from the teat into the bag in which they are contained; and at last find their way out, in search of more copious subsistence. Still, however, the false belly serves them for a retreat, either when they want to sleep or to suckle, or when they are pursued by an enemy. The dam, on such occasions, opens her bag to receive them, which they enter,

> ——————Pars formidine turpi
> Scandunt rursus equum et nota conduntur in alvo.

The oppossum, when on the ground, is a slow, helpless animal; the formation of its hands are alone sufficient to shew its incapacity of running with any degree of swiftness; but, to counterbalance this inconvenience, it climbs trees with great ease and expedition.* It chiefly subsists upon birds; and hides among the leaves of the trees to seize them by surprise. It often also hangs by the tail, which is long and muscular; and in this situation, for hours together, with the head downwards, it keeps watching for its prey. If any lesser animal, which it is able to overcome, passes underneath, it drops upon it with deadly aim, and quickly devours it. By means of its tail, the oppossum also slings from one tree to another, hunts insects, escapes its pursuers, and provides for its safety. It seems to be a creature that lives upon vegetables, as well as animal substances, roots, sugar-canes, the bark, and even the leaves of trees. It is easily tamed, but it is a disagreeable domestic, as well from its stupidity and figure as its scent, which, however fragrant in small quantities, fails not to be ungrateful when copiously supplied.

An animal greatly resembling the former,† is the MARMOSE, which is found in the same continent. It seems only to differ in size, being less; and, instead of a bag to receive its young, has only two longitudinal folds near the thighs, within which the young, which are prematurely brought

* Buffon, vol. xxi. p. 174. † Buffon, vol. xxi. p. 212.

forth, as in the last instance, continue to suckle. The young of these, when first produced, are not above the size of a bean; but continue sticking to the teat, until they have arrived at greater maturity.

The CAYOPOLIN is somewhat larger than the former, and a good deal resembling it in habits and figure, except that its snout is more pointed, its tail longer in proportion, and its colour different, being of an ash, somewhat inclining to yellow; however, I should suppose it to be only a variety of the former.

To this number we may add the PHILANGER, so called by Mr. Buffon; a good deal resembling the former, but distinguished by the fashion of its hinder hands; the thumb and fore-finger being joined together, except at the extremities. This animal is about the size of a rat, and has, accordingly, by some, been called the RAT OF SURINAM.

The last animal of this class is called, by Mr. Buffon, the TARSIER. This extraordinary little animal resembles the former, in having four hands, and a long tail; but it differs very much in the extreme length of its hinder legs, which are longer than the rest of its whole body. The bones of that part of the foot called the *tarsus*, are likewise so very long, that from thence the animal has received its name: the tail is naked in the middle, and hairy only at both extremities: its hair is woolly, soft, and of a deep ash-colour. As to the rest, it is unknown from what country this animal was brought; but the naturalist from whom we have its description, supposes it to be a native of America.

From this general description of four-handed animals, we perceive what few advantages the brute creation derive from those organs, that, in man, are employed to so many great and useful purposes. The being able to pluck their food from the trees, the capacity of clinging among the branches, and at most of converting one of those branches into a weapon of offence, are the highest stretches of their sagacity, and the only use their hands have hitherto been employed in; and yet some superficial men have asserted, that the hands alone are sufficient to vindicate the dominion of mankind over other animals; and that much of his boasted reason, is nothing more than the result of his happier conformation: however, were this so, an ape or a monkey would, in some instances, be more rational than we; their fingers

are smaller, and, in some of them, more finely formed than ours. To what a variety of purposes might they not be employed, if their powers were properly exerted! Those works which we, from the largeness of our fingers, are obliged to go clumsily about, one of these could very easily perform with the utmost exactness; and if the fineness of the hand assisted reason, an ape would be one of the most reasonable beings in the creation. But these admirably formed machines, are almost useless both to mankind and themselves; and contribute little more to the happiness of animal life than the paws of the lowest quadruped. They are supplied, indeed, with the organs; but they want the mind to put them into action: it is that reasoning principle alone, with which man has been endowed, that can adapt seemingly opposite causes to concur in the same general design; and even where the organs are deficient, that can supply their place, by the intervention of assisting instruments. Where reason prevails, we find that it scarcely matters what the organs are that give it the direction; the being furnished with that principle still goes forward steadily, and uniformly successful; breaks through every obstacle, and becomes master of every enterprise. I have seen a man without hands or legs convert, by practice, his very stumps to the most convenient purposes; and with these clumsy instruments perform the most astonishing feats of dexterity. We may, therefore, conclude that it is the mind alone that gives a master to the creation; and that, if a bear or a horse were endowed with the same intellects that have been given to man, the hardness of a hoof, or the awkwardness of a paw, would be no obstacle to their advancement in the arts of dominion, or of social felicity.

[Nearly allied to the last kind, in having a pouch for the security of its young, but differing in many other particulars, is the KANGUROO, a native of New Holland, first discovered by Captain Cook in the year 1770. Its size is at least that of a full-grown sheep; but there is a remarkable disproportion in its shape, the head and neck being very small, while the lower parts gradually dilate to a very great size: the fore-legs are hardly nineteen inches long, while the hinder ones measure three feet nine inches: accordingly, this animal's pace consists of vast springs or bounds, said to exceed nine feet in height and twenty in length. The tail is of such great strength as to be able to break a man's leg at a single blow. The young ones (of which the female is said to have only one at a time) at first hardly exceed an inch in length, and in the early periods of their growth reside entirely within the pouch of the dam.



ELEPHANT.

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CHAP. II.

OF THE ELEPHANT.

HAVING gone through the description of those quadrupeds that, by resembling each other in some striking particular, admit of being grouped together, and considered under one point of view, we now come to those insulated sorts that bear no similitude with the rest, and that to be distinctly described must be separately considered.

The foremost of these, and in every respect the noblest quadruped in nature, is the Elephant, not less remarkable for its size than its docility and understanding. All historians concur in giving it the character of the most sagacious animal next to man; and yet, were we to take our idea of its capacity from its outward appearance, we should be led to conceive very meanly of its abilities. The elephant, at first view, presents the spectator with an enormous mass of flesh that seems scarcely animated. Its huge body, covered with a callous hide, without hair; its large mis-shapen legs, that seem scarcely formed for motion; its little eyes, large ears, and long trunk; all give it an air of extreme stupidity. But our prejudices will soon subside when we come to examine its history; they will even serve to increase our surprise, when we consider the various advantages it derives from so clumsy a conformation.

The elephant is seen from seven to no less than fifteen feet high. Whatever care we take to imagine a large animal before-hand, yet the first sight of this huge creature never fails to strike us with astonishment, and in some measure to exceed our idea. Having been used to smaller animals, we have scarcely any conception of its magnitude; for a moving column of flesh, fourteen feet high, is an object so utterly different from those we are constantly presented with, that to be conceived it must be actually seen. Such, I own, were the suggestions that naturally arose to me when I first saw this animal, and yet for the sight of which I had taken care to prepare my imagination. I found my ideas fall as

They feed on vegetables, drink by lapping, and burrow under ground. The Rat Kanguroo differs from the above, being only about the size of a rabbit, and is far less elegant and pleasing.]

short of its real size as they did of its real figure; neither the pictures I had seen, nor the descriptions I had read, giving me adequate conceptions of either.

It would, therefore, be impossible to give an idea of this animal's figure by a description; which, even assisted by the art of the engraver, will but confusedly represent the original. In general, it may be observed, that the forehead is very high and rising, the ears very large and dependent, the eyes extremely small, the proboscis or trunk long, the body round and full, the back rising in an arch, and the whole animal short in proportion to its height. The feet are round at the bottom; on each foot there are five flat horny risings, which seem to be the extremities of the toes, but do not appear outwardly. The hide is without hair, full of scratches and scars, which it receives in its passage through thick woods and thorny places. At the end of the tail there is a tuft of hair, a foot and half long. The female is less than the male, and the udder is between the fore-legs. But a more accurate, as well as a more entertaining description of the parts, will naturally occur in the history of their uses.

Of all quadrupeds, the elephant is the strongest, as well as the largest; and yet, in a state of nature, it is neither fierce nor formidable.* Mild, peaceful, and brave, it never abuses its power or its strength, and only uses its force for its own protection, or that of its community. In its native deserts, the elephant is seldom seen alone, but appears to be a social, friendly creature. The oldest of the company conducts the band; that which is next in seniority brings up the rear. The young, the weak, and the sickly, fall into the centre; while the females carry their young, and keep them from falling by means of their trunks. They maintain this order only in dangerous marches, or when they desire to feed in cultivated grounds; they move with less precaution in the forests and solitudes; but without ever separating, or removing so far asunder as to be incapable of lending each other any requisite assistance. Nothing can be more formidable than a drove of elephants, as they appear at a distance in an African landscape; wherever they march, the forests seem to fall before them; in their passage, they bear

* I have extracted the greatest part of this description from Mr. Buffon. Where I add, I mark with commas, "thus."

down the branches upon which they feed; and if they enter into an enclosure, they destroy all the labours of the husbandman in a very short time. Their invasions are the more disagreeable, as there is no means of repelling them; since it would require a small army to attack the whole drove when united. It now and then happens that one or two is found lingering behind the rest, and it is against these that the art and force of the hunters are united; but an attempt to molest the whole body would certainly be fatal. They go forward directly against him who offers the insult, strike him with their tusks, seize him with their trunks, fling him into the air, and then trample him to pieces under their feet. But they are thus dreadful only when offended, and do no manner of personal injury when suffered to feed without interruption. It is even said that they are mindful of injuries received; and when once molested by man seek all occasions for the future to be revenged; they smell him with their long trunks at a distance; follow him with all their speed upon the scent; and though slow to appearance they are soon able to come up with and destroy him.

In their natural state they delight to live along the sides of rivers, to keep in the deepest vales, to refresh themselves in the most shady forests and watery places. They cannot live far from the water; and they always disturb it before they drink. They often fill their trunk with it either to cool that organ, or to divert themselves by spurting it out like a fountain. They are equally distressed by the extremes of heat and cold; and to avoid the former, they frequently take shelter in the most obscure recesses of the forest, or often plunge into the water, and even swim from the continent into islands some leagues distant from the shore.

Their chief food is of the vegetable kind, for they loathe all kind of animal diet. When one among their number happens to light upon a spot of good pasture, he calls the rest, and invites them to share in the entertainment; but it must be very copious pasture indeed that can supply the necessities of the whole band. As with their broad and heavy feet they sink deep wherever they go, they destroy much more than they devour; so that they are frequently obliged to change their quarters, and to migrate from one country to another. The Indians and negroes, who are often incom-

moded by such visitants, do all they can to keep them away, making loud noises, and large fires round their cultivated grounds: but these precautions do not always succeed; the elephants often break through their fences, destroy their whole harvest, and overturn their little habitations. When they have satisfied themselves, and trod down or devoured whatever lay in their way, they then retreat into the woods in the same orderly manner in which they made their irruption.

Such are the habits of this animal, considered in a social light; and if we regard it as an individual, we shall find its powers still more extraordinary. With a very awkward appearance it possesses all the senses in great perfection, and is capable of applying them to more useful purposes than any other quadruped. The elephant, as we observed, has very small eyes, when compared to the enormous bulk of its body. But though their minuteness may at first sight appear deformed, yet, when we come to examine them, they are seen to exhibit a variety of expression, and to discover the various sensations with which it is moved. It turns them with attention and friendship to its master; it seems to reflect and deliberate; and as its passions slowly succeed each other, their various workings are distinctly seen.

The elephant is not less remarkable for the excellence of its hearing. Its ears are extremely large, and greater in proportion than even those of an ass. They are usually dependent; but it can readily raise and move them. They serve also to wipe its eyes, and to protect them against the dust and flies that might otherwise incommode them. It appears delighted with music, and very readily learns to beat time, to move in measure, and even to join its voice to the sound of the drum and the trumpet.

This animal's sense of smelling is not only exquisite, but it is in a great measure pleased with the same odours that delight mankind. The elephant gathers flowers with great pleasure and attention; it picks them up one by one, unites them into a nosegay, and seems charmed with the perfume. The orange-flower seems to be particularly grateful, both to its sense of taste and smelling; it strips the tree of all its verdure, and eats every part of it, even to the banches

themselves. It seeks in the meadows the most odoriferous plants to feed upon; and in the woods it prefers the cocoa, the banana, the palm, and the sago-tree, to all others. As the shoots of these are tender, and filled with pith, it eats not only the leaves and the fruits, but even the branches, the trunk, and the whole plant to the very roots.

But it is in the sense of touching that this animal excels all others of the brute creation, and perhaps even man himself. The organ of this sense lies wholly in the trunk, which is an instrument peculiar to this animal, and that serves it for all the purposes of a hand. The trunk is, properly speaking, only the snout lengthened out to a great extent, hollow like a pipe, and ending in two openings, or nostrils, like those of a hog. An elephant of fourteen feet high has the trunk about eight feet long, and five feet and a half in circumference at the mouth, where it is thickest. It is hollow all along, but with a partition running from one end of it to the other; so that though outwardly it appears like a single pipe, it is inwardly divided into two. This fleshy tube is composed of nerves and muscles, covered with a proper skin of a blackish colour, like that of the rest of the body. It is capable of being moved in every direction, of being lengthened and shortened, of being bent and straightened; so pliant as to embrace any body it is applied to, and yet so strong that nothing can be torn from the gripe. To aid the force of this grasp, there are several little eminences, like a caterpillar's feet, on the underside of this instrument, which, without doubt, contribute to the sensibility of the touch, as well as to the firmness of the hold. Through this trunk the animal breathes, drinks, and smells, as through a tube; and at the very point of it, just above the nostrils, there is an extension of the skin, about five inches long, in the form of a finger, and which, in fact, answers all the purposes of one; for, with the rest of the extremity of the trunk, it is capable of assuming different forms at will, and consequently of being adapted to the minutest objects. By means of this, the elephant can take a pin from the ground, untie the knots of a rope, unlock a door, and even write with a pen. "I have myself seen," says Ælian, "an elephant writing Latin characters on a board, in a very orderly manner, his keeper only shewing him the figure of each letter. While thus employed, the eyes might be observed studiously cast down

upon the writing, and exhibiting an appearance of great skill and erudition." It sometimes happens that the object is too large for the trunk to grasp; in such a case the elephant make use of another expedient, as admirable as any of the former. It applies the extremity of the trunk to the surface of the object, and, sucking up its breath, lifts and sustains such a weight as the air in that case is capable of keeeping suspended. In this manner this instrument is useful in most of the purposes of life; it is an organ of smelling, of touching, and of suction; it not only provides for the animal's necessities and comforts, but it also serves for its ornament and defence.

But, though the elephant be thus admirably supplied by its trunk, yet, with respect to the rest of its conformation, it is unwieldy and helpless. The neck is so short that it can scarcely turn the head, and must wheel round in order to discover an enemy from behind. The hunters that attack it upon that quarter generally thus escape the effects of its indignation; and find time to renew their assaults while the elephant is turning to face them. The legs are, indeed, not so inflexible as the neck, yet they are very stiff, and bend not without difficulty. Those before seem to be longer than the hinder; but, upon being measured, are found to be something shorter. The joints, by which they bend, are nearly in the middle, like the knee of a man; and the great bulk which they are to support makes their flexure ungainly. While the elephant is young, it bends the legs to lie down or to rise; but when it grows old, or sickly, this is not performed without human assistance, and it becomes, consequently, so inconvenient, that the animal chooses to sleep standing. The feet, upon which these massy columns are supported, form a base scarcely broader than the legs they sustain. They are divided into five toes, which are covered beneath the skin, and none of which appear to the eye; a kind of protuberance like claws are only observed, which vary in number from three to five. The apparent claws vary; the internal toes are constantly the same. The sole of the foot is furnished with a skin as thick and hard as horn, and which completely covers the whole under-part of the foot.

To the rest of the elephant's incumbrances may be added it enormous tusks, which are unserviceable for chewing, and are only weapons of defence. These, as the animal

grows old, become so heavy, that it is sometimes obliged to make holes in the walls of its stall to rest them in, and ease itself of the fatigue of their support. It is well known to what an amazing size these tusks grow; they are two in number, proceeding from the upper jaw, and are sometimes found above six feet long. Some have supposed them to be rather the horns than the teeth of this animal; but, besides their greater similitude to bone than to horn, they have been indisputably found to grow from the upper jaw, and not from the frontal bones, as some have thought proper to assert.* Some also have asserted, that these tusks are shed in the same manner as the stag sheds its horns; but it is very probable, from their solid consistence, and from their accidental defects, which often appears to be the effect of a slow decay, that they are as fixed as the teeth of other animals are generally found to be. Certain it is that the elephant never sheds them in a domestic state, but keeps them till they become inconvenient and encumbersome to the last degree. An account of the uses to which these teeth are applied, and the manner of choosing the best ivory, belongs rather to a history of the arts than of nature.

This animal is equally singular in other parts of its conformation; the lips and the tongue in other creatures serve to suck up and direct their drink or their food; but in the elephant they are totally inconvenient for such purposes; and it not only gathers its food with its trunk, but supplies itself with water by the same means. When it eats hay, as I have seen it frequently, it takes up a small wisp of it with the trunk, turns and shapes it with that instrument for some time, and then directs it into the mouth, where it is chewed by the great grinding-teeth, that are large in proportion to the bulk of the animal. This pacquet, when chewed, is swallowed, and never ruminated again, as in cows or sheep, the stomach and intestines of this creature more resembling those of a horse. Its manner of drinking is equally extraordinary. For this purpose the elephant dips the end of its trunk into the water, and sucks up just as much as fills that great fleshy tube completely. It then lifts up its head with the trunk full, and turning the point into its mouth, as if it intended to swallow trunk and all, it drives the point below

* See Mr. Daubenton's description of the skeleton of this animal.

the opening of the wind-pipe. The trunk being in this position, and still full of water, the elephant then blows strongly into it at the other end, which forces the water it contains into the throat; down which it is heard to pour with a loud gurgling noise, which continues till the whole is blown down. From this manner of drinking some have been led into an opinion that the young elephant sucks with its trunk, and not with its mouth; this, however, is a fact which no traveller has hitherto had an opportunity of seeing, and it must be referred to some future accident to determine.*

The hide of the elephant is as remarkable as any other part. It is not covered over with hair, as in the generality of quadrupeds, but is nearly bare. Here and there indeed a few bristles are seen growing in the scars and wrinkles of the body, but very thinly scattered over the rest of the skin; but in general the head is dry, rough, and wrinkled, and resembling more the bark of an old tree than the skin of an animal. This grows thicker every year; and by a constant addition of substance, it at length contracts that disorder well known by the name of the elephantiasis, or Arabian leprosy; a disease to which man, as well as the elephant, is often subject. In order to prevent this, the Indians rub the elephant with oil, and frequently bathe it, to preserve its pliancy. To the inconveniences of this disorder is added another, arising from the great sensibility of those parts that are not callous. Upon these the flies settle in great abundance, and torment this animal unceasingly; to remedy which, the elephant tries all its arts; using not only its tail and trunk in the natural manner to keep them off, but even takes the branch of a tree, or a bundle of hay, to strike them off with. When this fails, it often gathers up the dust with its trunk, and thus covers all the sensible places. In this manner it has been seen to dust itself several times a day, and particularly upon leaving the bath.

Water is as necessary to this animal as food itself. When in a state of nature, the elephant rarely quits the banks of

* The young elephant, it is now known, does not suck by the trunk, but by the mouth only, as in all other quadrupeds; during which the trunk of the young is thrown back over the head. It is, however, highly remarkable, if what is related be true, that they do not attach themselves to their dams in particular, but suck indiscriminately the females of the whole herd

the river, and often stands in water up to the belly. In a state of servitude, the Indians take equal care to provide a proper supply; they wash it with great address; they give it all the conveniences for lending assistance to itself; they smooth the skin with a pumice-stone, and then rub it over with oils, essences, and odours.

It is not to be wondered at that an animal furnished with so many various advantages, both of strength, sagacity, and obedience, should be taken into the service of man. We accordingly find that the elephant, from time immemorial, has been employed either for the purposes of labour, of war, or of ostentation; to increase the grandeur of eastern princes, or to extend their dominions. We have hitherto been describing this animal in its natural state; we now come to consider it in a different view, as taken from the forest, and reduced to human obedience. We are now to behold this brave harmless creature as learning a lesson from mankind, and instructed by him in all the arts of war, massacre, and devastation. We are now to behold this half-reasoning animal led into the field of battle, and wondering at those tumults and that madness which he is compelled to increase. The elephant is a native of Africa and Asia, being found neither in Europe nor America. In Africa he still retains his natural liberty. The savage inhabitants of that part of the world, instead of attempting to subdue this powerful creature to their necessities, are happy in being able to protect themselves from his fury. Formerly, indeed, during the splendour of the Carthaginian empire, elephants were used in their wars; but this was only a transitory gleam of human power in that part of the globe; the natives of Africa have long since degenerated, and the elephant is only known among them from his devastations. However, there are no elephants in the northern parts of Africa at present, there being none found on this side of Mount Atlas. It is beyond the river Senegal that they are to be met with in great numbers, and so down to the Cape of Good Hope, as well as in the heart of the country. In this extensive region they appear to be more numerous than in any other part of the world. They are there less fearful of man: less retired into the heart of the forests, they seem to be sensible of his impotence and ignorance; and often come down to ravage his little labours. They treat him with the same haughty dis-

dain which they shew to other animals, and consider him as a mischievous little being, that fears to oppose them openly.

But although these animals are most plentiful in Africa, it is only in Asia that the greatest elephants are found, and rendered subservient to human command. In Africa, the largest do not exceed ten feet high; in Asia they are found from ten to fifteen. Their price increases in proportion to their size; and when they exceed a certain bulk, like jewels, their value then rises as the fancy is pleased to estimate.

The largest are entirely kept for the service of princes; and are maintained with the utmost magnificence, and at the greatest expense. The usual colour of the elephant, is a dusky black, but some are said to be white; and the price of one of these is inestimable. Such a one is peculiarly appropriated for the monarch's own riding; he is kept in a palace, attended by the nobles, and almost adored by the people.* Some have said that these white elephants are larger than the rest;† others assert that they are less; and still others entirely doubt their existence.

As the art of war is but very little improved in Asia, there are few princes of the East who do not procure and maintain as many elephants as they are able, and place great confidence on their assistance in an engagement. For this purpose they are obliged to take them wild in their native forests, and tame them; for the elephant never breeds in a state of servitude. It is one of the most striking peculiarities in this extraordinary creature, that his generative powers totally fail when he comes under the dominion of man; as if he seemed unwilling to propagate a race of slaves to increase the pride of his conqueror. There is, perhaps, no other quadruped that will not breed in its own native climate, if indulged with a moderate share of freedom; and we know that many of them will copulate in every climate. The elephant alone has never been seen to breed; and though he has been reduced under the obedience of man for ages, the duration of pregnancy in the female‡ still remains a secret. Aristotle,

* P. Vincent Marie. † P. Tachard.

‡ Multis persuasum est elephantem non brutorum sed hominum more coire. Quod retro mingit non dubitatur. Sed ipse vidi marem hujusce speciei, in nostri regis stabulis, super fæmellam itidem inclusam quadrupedum more silientem, pene paululum incurvato sed sufficienter recto.

indeed, asserts, that she goes two years with young; that she continues to suckle her young for three years, and that she brings forth but one at a time: but he does not inform us of the manner in which it was possible for him to have his information. From authorities equally doubtful, we learn, that the little one is about as large as a wild boar the instant it is brought forth; that its tusks do not yet appear; but that all the rest of its teeth are apparent; that at the age of six months, it is as large as an ox, and its tusks pretty well grown; and that it continues in this manner, for near thirty years, advancing to maturity. All this is doubtful; but it is certain that, in order to recruit the numbers which are consumed in war, the princes of the East are every year obliged to send into the forests, and to use various methods to procure a fresh supply. Of all these numerous bands, there is not one that has not been originally wild; nor one that has not been forced into a state of subjection. Men themselves are often content to propagate a race of slaves, that pass down in this wretched state through successive generations: but the elephant, under subjection, is unalterably barren; perhaps from some physical causes, which are as yet unknown.

The Indian princes having vainly endeavoured to multiply the breed of elephants, like that of other animals, have been at last content to separate the males from the females, to prevent those accesses of desire, which debilitated without multiplying the species. In order to take them wild in the woods, a spot of ground is fixed upon, which is surrounded with a strong pallisade. This is made of the thickest and the strongest trees; and strengthened by cross bars, which give firmness to the whole. The posts are fixed at such distances from each other that a man can easily pass between them; there being only one great passage left open, through which an elephant can easily come; and which is so contrived as to shut behind, as soon as the beast is entered. To draw him into this enclosure, it is necessary first to find him out in the woods; and a female elephant is conducted along into the heart of the forest, where it is obliged by its keeper to cry out for the male. The male very readily answers the cry, and hastens to join her; which the keeper perceiving, obliges her to retreat, still repeating the same cry, until she leads the animal into the enclosure

already described, which shuts the moment he is entered. Still, however, the female proceeds calling and inviting, while the male proceeds forward in the enclosure, which grows narrower all the way, and until the poor animal finds himself completely shut up, without the power of either advancing or retreating; the female in the mean time being let out by a private way, which she has been previously accustomed to. The wild elephant, upon seeing himself entrapped in this manner, instantly attempts to use violence; and, upon seeing the hunters, all his former desires only turn to fury. In the mean time, the hunters, having fixed him with cords, attempt to soften his indignation, by throwing buckets of water upon him in great quantities, rubbing the body with leaves, and pouring oil down his ears. Soon after, two tame elephants are brought, a male and a female, that caress the indignant animal with their trunks; while they still continue pouring water to refresh it. At last a tame elephant is brought forward, of that number which is employed in instructing the new-comers, and an officer riding upon it, in order to shew the late captive that it has nothing to fear. The hunters then open the enclosure; and while this creature leads the captive along, two more are joined on either side of it, and these compel it to submit. It is then tied by cords to a massy pillar, provided for that purpose, and suffered to remain in that position for about a day and a night, until its indignation be wholly subsided. The next day it begins to be somewhat submissive; and in a fortnight is completely tamed like the rest. The females are taken when accompanying the males; they often come into these enclosures, and they shortly after serve as decoys to the rest. But the method of taking the elephant differs, according to the abilities of the hunter: the negroes of Africa, who hunt this animal merely for its flesh, are content to take it in pit-falls; and often to pursue it in the defiles of a mountain, where it cannot easily turn, and so wound it from behind till it falls.

The elephant, when once tamed, becomes the most gentle and obedient of all animals. It soon conceives an attachment for the person that attends it, caresses him, obeys him, and seems to anticipate his desires. In a short time it begins to comprehend several of the signs made to it, and

even the different sounds of the voice; it perfectly distinguishes the tone of command from that of anger or approbation, and acts accordingly. It is seldom deceived in its master's voice; it receives his orders, with attention, and executes them with prudence, eagerly, yet without precipitation. All its motions are regulated, and its actions seem to partake of its magnitude; being grave, majestic, and secure. It is quickly taught to kneel down, to receive its rider; it caresses those it knows with its trunk; with this salutes such as it is ordered to distinguish, and with this, as with a hand, helps to take up a part of its load. It suffers itself to be arrayed in harness, and seems to take a pleasure in the finery of its trappings. It draws either chariots, cannon, or shipping, with surprising strength and perseverance; and this with a seeming satisfaction, provided that it be not beaten without a cause, and that its master appears pleased with its exertions.

The elephant's conductor is usually mounted upon its neck, and makes use of a rod of iron to guide it, which is sometimes pointed, and at others bent into a hook. With this the animal is spurred forward when dull or disobedient; but, in general, a word is sufficient to put the gentle creature into motion, especially when it is acquainted with its conductor. This acquaintance is often perfectly necessary; for the elephant frequently takes such an affection to its keeper, that it will obey no other; and it has been known to die for grief, when, in some sudden fit of madness, it has killed its conductor. We are told, that one of these, that was used by the French forces in India for the drawing their cannon, was promised, by the conductor, a reward, for having performed some painful service; but being disappointed of its expectations, it slew him in a fury. The conductor's wife, who was a spectator of this shocking scene, could not restrain her madness and despair; but running with her two children in her arms, threw them at the elephant's feet, crying out, that since it had killed her husband, it might kill her and her children also. The elephant, seeing the children at its feet, instantly stopped, and moderating its fury, took up the eldest with its trunk, and placing him upon its neck, adopted him for its conductor, and obeyed him ever after with great punctuality.

But it is not for drawing burdens alone, that the ele-

phants are serviceable in war; they are often brought into the ranks, and compelled to fight in the most dangerous parts of the field of battle. There was a time, indeed, in India when they were much more used in war than at present. A century or two ago, a great part of the dependence of the general was upon the number and the expertness of his elephants; but of late, since war has been contented to adopt fatal instead of formidable arts, the elephant is little used, except for drawing cannon, or transporting provisions. The princes of the country are pleased to keep a few for ornament, or for the purposes of removing their seraglios: but they are seldom led into a field of battle, where they are unable to withstand the discharge of fire-arms, and have often been found to turn upon their employers. Still, however, they are used in war, in the more remote parts of the East; in Siam, in Cochin-China, in Tonquin, and Pegu. In all these places they not only serve to swell the pomp of state, being adorned with all the barbarian splendour that those countries can bestow, but they are actually led into the field of battle, armed before with coats of mail, and loaded on the back each with a square tower, containing from five combatants to seven. Upon its neck sits the conductor, who goads the animal into the thickest ranks, and encourages it to increase the devastation: wherever it goes, nothing can withstand its fury; it levels the ranks with its immense bulk, flings such as oppose it into the air, or crushes them to death under its feet. In the mean time those who are placed upon its back, combat as from an eminence, and fling down their weapons with double force, their weight being added to their velocity. Nothing, therefore, can be more dreadful, or more irresistible, than such a moving machine, to men unacquainted with the modern arts of war; the elephant thus armed and conducted, raging in the midst of the field of battle, inspires more terror than even those machines that destroy at a distance, and are often most fatal when most unseen. But this method of combating is rather formidable than effectual: polished nations have ever been victorious over those semi-barbarous troops that have called in the elephant to their assistance, or attempted to gain a victory by merely astonishing their opposers. The Romans quickly learned the art of opening

their ranks to admit the elephant, and thus separating it from assistance, quickly compelled its conductors to calm the animals' fury, and to submit. It sometimes also happened that the elephant became impatient of control; and, instead of obeying its conductor, turned upon those forces it was employed to assist. In either case, there was a great deal of preparation to very little effect, for a single elephant is known to consume as much as forty men in a day.

At present, therefore, they are chiefly employed in carrying, or drawing burdens, throughout the whole Peninsula of India; and no animal can be more fitted by nature for this employment. The strength of an elephant is equal to its bulk, for it can, with great ease, draw a load that six horses could not remove; it can readily carry upon its back three or four thousand weight; upon its tusks alone it can support near a thousand: its force may also be estimated from the velocity of its motion, compared to the mass of its body. It can go, in its ordinary pace, as fast as a horse at an easy trot; and, when pushed, it can move as swiftly as a horse at full gallop. It can travel with ease fifty or sixty miles a day; and, when hard pressed, almost double that distance. It may be heard trotting on at a great distance; it is easy also to follow it by the track, which is deeply impressed on the ground, and from fifteen to eighteen inches in diameter.

In India they are also put to other very disagreeable offices; for in some courts of the more barbarous princes they are used as executioners: and this horrid task they perform with great dexterity: with their trunks they are seen to break every limb of the criminal at the word of command; they sometimes trample him to death, and sometimes impale him on their enormous tusks, as directed. In this the elephant is rather the servant of a cruel master than a voluntary tyrant, since no other animal of the forest is so naturally benevolent and gentle; equally mindful of benefits as sensible of neglect, he contracts a friendship for his keeper, and obeys him even beyond his capacity.

In India, where they were at one time employed in launching ships, a particular elephant was directed to force a very large vessel into the water: the work proved superior to its strength, but not to its endeavours; which, however, the keeper affected to despise. "Take away," says he, "that lazy beast, and bring another better fitted for service." The

poor animal instantly upon this redoubled its efforts, fractured its skull, and died upon the spot.

In Delhi, an elephant passing along the streets put his trunk into a tailor's shop, where several people were at work. One of the persons of the shop, desirous of some amusement, pricked the animal's trunk with his needle, and seemed highly delighted with this slight punishment. The elephant, however, passed on without any immediate signs of resentment; but coming to a puddle filled with dirty water, he filled his trunk, returned to the shop, and spurted the contents over all the finery upon which the tailors were then employed.

An elephant in Adsmeer, which often passed through the bazar or market, as he went by a certain herb-woman, always received from her a mouthful of greens. Being one day seized with a periodical fit of madness he broke his fetters, and running through the market, put the crowd to flight, and among others, this woman, who, in her haste forgot a little child at her stall. The elephant recollecting the spot where its benefactress was accustomed to sit, took up the infant gently in its trunk, and conveyed it to a place of safety.

At the Cape of Good Hope it is customary to hunt those animals for the sake of their teeth. Three horsemen, well mounted, and armed with lances, attack the elephant alternately, each relieving the other, as they see their companion pressed, till the beast is subdued. Three Dutchmen, brothers, who had made large fortunes by this business, determined to retire to Europe, and enjoy the fruits of their labours; but they resolved, one day before they went, to have a last chase, by way of amusement: they met with their game, and began their attack in the usual manner: but, unfortunately, one of their horses falling, happened to fling his rider; the enraged elephant instantly seized the unhappy huntsman with his trunk, flung him up to a vast height in the air, and received him upon one of the tusks as he fell; and then turning towards the other two brothers, as if it were with an aspect of revenge and insult, held out to them the impaled wretch, writhing in the agonies of death.

The teeth of the elephant are what produce the great enmity between him and mankind; but whether they are shed like the horns of the deer, or whether the animal be killed

to obtain them, is not yet perfectly known. All we have as yet certain is, that the natives of Africa, from whence almost all our ivory comes, assure us that they find the greatest part of it in their forests; nor would, say they, the teeth of an elephant recompense them for their trouble and danger in killing it: notwithstanding, the elephants which are tamed by man are never known to shed their tusks; and from the hardness of their substance, they seem no way analogous to deers' horns.

The teeth of the elephant are very often found in a fossil state. Some years ago, two great grinding-teeth, and part of the tusk of an elephant, were discovered at the depth of forty-two yards in a lead-mine in Flintshire.*

The tusks of the Mammoth, so often found fossil in Siberia, and which are converted to the purposes of ivory, are generally supposed to belong to the elephant: however, the animal must have been much larger in that country than it is found at present, as those tusks are often known to weigh four hundred pounds; while those that come from Africa seldom exceed two hundred and fifty. These enormous tusks are found lodged in the sandy banks of the Siberian rivers; and the natives pretend that they belong to an animal which is four times as large as the elephant.

There have lately been discovered several enormous skeletons, five or six feet beneath the surface, on the banks of the Ohio, not remote from the river Miume, in America, seven hundred miles from the sea-coast. Some of the tusks are near seven feet long; one foot nine inches in circumference at the base, and one foot near the point; the cavity at the root or base nineteen inches deep. Besides their size, there are yet other differences: the tusks of the true elephant have sometimes a very slight lateral bend; these have a larger twist, or spiral curve, towards the smaller end: but the great and specific difference consists in the shape of the grinding-teeth; which, in these newly found, are fashioned like the teeth of a carnivorous animal; not flat and ribbed transversely on their surface, like those of the modern elephant, but furnished with a double row of high and conic processes, as if intended to masticate, not to grind their food. A third difference is in the thigh-bone, which is of a great

* Pennant's Synopsis, p. 90

disproportionable thickness to that of the elephant; and has also some other anatomical variations. These fossil bones have been also found in Peru and the Brazils; and, when cut and polished by the workers in ivory, appear, in every respect, similar. It is the opinion of Dr. Hunter, that they must have belonged to a larger animal than the elephant; and differing from it in being carnivorous. But as yet this formidable creature has evaded our search; and, if indeed, such an animal exists, it is happy for man that it keeps at a distance; since what ravage might not be expected from a creature endued with more than the strength of the elephant, and all the rapacity of a tiger!

CHAP. III.

OF THE RHINOCEROS.

Next to the Elephant, the Rhinoceros is the most powerful of animals. It is usually found twelve feet long, from the tip of the nose to the insertion of the tail; from six to seven feet high; and the circumference of its body is nearly equal to its length. It is, therefore, equal to the elephant in bulk: and if it appears much smaller to the eye, the reason is, that its legs are much shorter. Words can convey but a very confused idea of this animal's shape; and yet there are few so remarkably formed: its head is furnished with a horn, growing from the snout, sometimes three feet and a half long; and but for this, that part would have the appearance of the head of a hog; the upper lip, however, is much longer in proportion, ends in a point, is very pliable, serves to collect its food, and deliver it into the mouth: the ears are large, erect, and pointed; the eyes are small and piercing; the skin is naked, rough, knotty, and lying upon the body in folds, after a very peculiar fashion: there are two folds very remarkable; one above the shoulders, and another over the rump: the skin, which is of a dirty brown colour, is so thick as to turn the edge of a scimitar, and to resist a musket-ball; the belly hangs low; the legs are short, strong, and thick, and the hoofs divided into three parts, each pointing forward.



T.Dixon, sc.

1. RHINOCEROS. 2. HIPPOPOTAMUS.

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Such is the general outline of an animal that appears chiefly formidable from the horn growing from its snout; and formed rather for war than with a propensity to engage. This horn is sometimes found from three to three feet and a half long, growing from the solid bone, and so disposed as to be managed to the greatest advantage. It is composed of the most solid substance; and pointed so as to inflict the most fatal wounds. The elephant, the boar, or the buffalo, are obliged to strike transversely with their weapons; but the rhinoceros employs all his force with every blow; so that the tiger will more willingly attack any other animal of the forest, than one whose strength is so justly employed. Indeed, there is no force which this terrible animal has to apprehend: defended, on every side, by a thick thorny hide, which the claws of the lion or the tiger are unable to pierce, and armed before with a weapon that even the elephant does not choose to oppose. The missionaries assure us, that the elephant is often found dead in the forests, pierced with the horn of a rhinoceros; and though it looks like wisdom to doubt whatever they tell us, yet I cannot help giving credit to what they relate on this occasion, particularly when confirmed by Pliny. The combat between these two, the most formidable animals of the forest, must be very dreadful. Emanuel, king of Portugal, willing to try their strength, actually opposed them to each other; and the elephant was defeated.

But though the rhinoceros is thus formidable by nature, yet imagination has not failed to exert itself, in adding to its terrors. The scent is said to be most exquisite; and it is affirmed that it consorts with the tiger. It is reported also, that when it has overturned a man, or any other animal, it continues to lick the flesh quite from the bone with its tongue, which is said to be extremely rough. All this, however, is fabulous: the scent, if we may judge from the expansion of the olfactory nerves, is not greater than that of a hog, which we know to be indifferent; it keeps company with the tiger, only because they both frequent watery places in the burning climates where they are bred; and as to its rough tongue, that is so far from the truth, that no animal of near its size has so soft a one. "I have often felt it myself," says Ladvocat, in his description of this

animal; "it is smooth, soft, and small, like that of a dog; and to the feel it appears as if one passed the hand over velvet; I have often seen it lick a young man's face who kept it, and both seemed pleased with the action."

The rhinoceros which was shown at London in 1739, and described by Dr. Parsons, had been sent from Bengal. Though it was very young, not being above two years old, yet the charge of his carriage and food from India cost near a thousand pounds. It was fed with rice, sugar, and hay: it was daily supplied with seven pounds of rice, mixed with three of sugar, divided into three portions; it was given great quantities of hay and grass, which it chiefly preferred; its drink was water, which it took in great quantities. It was of a gentle disposition, and permitted itself to be touched and handled by all visitors, never attempting mischief, except when abused, or when hungry; in such a case there was no method of appeasing its fury but by giving it something to eat. When angry, it would jump up against the walls of its room with great violence, and made many efforts to escape, but seldom attempted to attack its keeper, and was always submissive to his threats. It had a peculiar cry, somewhat a mixture between the grunting of a hog and the bellowing of a calf.

The age of these animals is not well known; it is said by some, that they bring forth at three years old; and if we may reason from analogy, it is probable they seldom live till above twenty. That which was shown in London was said by its keeper to be eighteen years old, and even at that age he pretended to consider it as a young one; however, it died shortly after, and that probably in the course of nature.

The rhinoceros is a native of the deserts of Asia and Africa, and is usually found in those extensive forests that are frequented by the elephant and the lion. As it subsists entirely upon vegetable food it is peaceful and harmless among its fellows of the brute creation; but, though it never provokes to combat, it equally disdains to fly. It is every way fitted for war, but rests content in the consciousness of its security. It is particularly fond of the prickly branches of trees, and is seen to feed upon such thorny shrubs as would be dangerous to other animals, either to

gather or to swallow. The prickly points of these, however, may only serve to give a poignant relish to this animal's palate, and may answer the same grateful ends in seasoning its banquet that spices do in heightening ours.

In some parts of the kingdom of Asia, where the natives are more desirous of appearing warlike than shewing themselves brave, these animals are tamed, and led into the field to strike terror into the enemy; but they are always an unmanageable and restive animal, and probably more dangerous to the employers than those whom they are brought to oppose.

The method of taking them is chiefly watching them, till they are found either in some moist or marshy place, where, like hogs, they are fond of sleeping and wallowing. They then destroy the old one with fire-arms; for no weapons that are thrown by the force of man are capable of entering this animal's hide. If, when the old one is destroyed, there happens to be a cub, they seize and tame it: these animals are sometimes taken in pit-falls, covered with green branches, laid in those paths which the rhinoceros makes in going from the forest to the river side.

There are some varieties in this animal, as in most others; some of them are found in Africa with a double horn, one growing above the other. This weapon, if considered in itself, is one of the strongest and most dangerous that nature furnishes to any part of the animal creation. The horn is entirely solid, formed of the hardest bony substance, growing from the upper maxillary bone, by so strong an apophyse, as seemingly to make but one part with it. Many are the medicinal virtues that are ascribed to this horn, when taken in powder; but these qualities have been attributed to it without any real foundation, and make only a small part of the many fables which this extraordinary animal has given rise to.

CHAP. IV.

THE HIPPOPOTAMUS.

The Hippopotamus is an animal as large, and not less formidable, than the rhinoceros; its legs are shorter, and its head rather more bulky than that of the animal last described. We have had but few opportunities in Europe of examining this formidable creature minutely; its dimensions, however, have been pretty well ascertained, by a description given us by Zerenghi, an Italian surgeon, who procured one of them to be killed on the banks of the river Nile. By his account it appears, that this terrible animal, which chiefly resides in the waters of that river, is above seventeen feet long, from the extremity of the snout to the insertion of the tail; above sixteen feet in circumference round the body, and above seven feet high: the head is near four feet long, and above nine feet in circumference. The jaws open about two feet wide, and the cutting-teeth, of which it hath four in each jaw, are above a foot long.

Its feet, in some measure, resemble those of the elephant and are divided into four parts. The tail is short, flat, and pointed; the hide is amazingly thick, and though not capable of turning a musket-ball, is impenetrable to the blow of a sabre; the body is covered over with a few scattered hairs of a whitish colour. The whole figure of the animal is something between that of an ox and a hog, and its cry is something between the bellowing of the one and the grunting of the other.

This animal, however, though so terribly furnished for war, seems no way disposed to make use of its prodigious strength against an equal enemy; it chiefly resides at the bottom of the great rivers and lakes of Africa, the Nile, the Niger, and the Zara; there it leads an indolent kind of life, and seems seldom disposed for action, except when excited by the calls of hunger. Upon such occasions, three or four of them are often seen at the bottom of a river, near some cataract, forming a kind of line, and seizing upon such fish as are forced down by the violence of the stream. In that element they pursue their prey with great swiftness and perseverance; they swim with much force, and remain at

the bottom for thirty or forty minutes, without rising to take breath. They traverse the bottom of the stream, as if walking upon land, and make a terrible devastation where they find plenty of prey. But it often happens, that this animal's fishy food is not supplied in sufficient abundance; it is then forced to come upon land, where it is an awkward and unwieldy stranger; it moves but slowly, and as it seldom forsakes the margin of the river, it sinks at every step it takes; sometimes, however, it is forced by famine up into the higher grounds, where it commits dreadful havock among the plantations of the helpless natives, who see their possessions destroyed, without daring to resist their invader. Their chief method is by lighting fires, striking drums, and raising a cry to frighten it back to its favourite element; and as it is extremely timorous upon land, they generally succeed in their endeavours. But if they happen to wound, or otherwise irritate it too closely, it then becomes formidable to all that oppose it: it overturns whatever it meets, and brings forth all its strength, which it seemed not to have discovered before that dangerous occasion. It possesses the same inoffensive disposition in its favourite element, that it is found to have upon land; it is never found to attack the mariners in their boats as they go up or down the stream; but should they inadvertently strike against it, or otherwise disturb its repose, there is much danger of its sending them at once to the bottom. "I have seen," says a mariner, as we find it in Dampier, "one of these animals open its jaw, and seizing a boat between its teeth, at once bite and sink it to the bottom. I have seen it, upon another occasion, place itself under one of our boats, and, rising under it, overset it, with six men who were in it; who, however, happily received no other injury." Such is the great strength of this animal; and from hence, probably, the imagination has been willingly to match it in combat against others more fierce, and equally formidable. The crocodile and shark have been said to engage with it, and yield an easy victory; but as the shark is only found at sea, and the hippopotamus never ventures beyond the mouth of fresh-water rivers, it is most probable that these engagements never occurred; it sometimes happens, indeed, that the princes of Africa amuse themselves with combats, on their fresh-water lakes, between this and other formidable animals; but whether the rhinoceros or

the crocodile are of this number we have not been particularly informed. If this animal be attacked on land, and finding itself incapable of vengeance from the swiftness of its enemy, it immediately returns to the river, where it plunges in head foremost, and, after a short time, rises to the surface, loudly bellowing, either to invite or intimidate the enemy; but though the negroes will venture to attack the shark or the crocodile in their natural element, and there destroy them, they are too well apprised of the force of the hippopotamus to engage it; this animal, therefore, continues the uncontrolled master of the river, and all others fly from its approach, or become an easy prey.

As the hippopotamus lives upon fish and vegetables, so it is probable the flesh of terrestrial animals may be equally grateful: the natives of Africa assert, that it has often been found to devour children and other creatures that it was able to surprise upon land; yet, as it moves but slowly, almost every creature, endued with a common share of swiftness, is able to escape it; and this animal, therefore, seldom ventures from the river side, but when pressed by the necessities of hunger, or of bringing forth its young.

The female always comes upon land to bring forth, and it is supposed that she seldom produces above one at a time. Upon this occasion these animals are particularly timorous, and dread the approach of a terrestrial enemy; the instant the parent hears the slightest noise it dashes into the stream, and the young one is seen to follow it with equal alacrity.

The young ones are said to be excellent eating; but the negroes, to whom nothing that has life comes amiss, find an equal delicacy in the old. Dr. Pococke has seen their flesh sold in the shambles like beef; and it is said that their breast, in particular, is as delicate eating as veal. As for the rest, these animals are found in great numbers, and as they produce very fast, their flesh might supply the countries where they are found, could those barbarous regions produce more expert huntsmen. It may be remarked, however, that this creature, which was once in such plenty at the mouth of the Nile, is now wholly unknown in Lower Egypt, and is no where to be found in that river, except above the cataracts.



T. Dixon, sc.

THE CAMELOPARD.

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CHAP. V.

THE CAMELOPARD.

WERE we to be told of an animal so tall, that a man on horseback could with ease ride under its belly, without stooping, we should hardly give credit to the relation; yet of this extraordinary size is the camelopard, an animal that inhabits the deserts of Africa, and the accounts of which are so well ascertained, that we cannot deny our assent to their authority. It is no easy matter to form an adequate idea of this creature's size, and the oddity of its formation. It exhibits somewhat the slender shape of the deer, or the camel, but destitute of their symmetry, or their easy power of motion. The head somewhat resembles that of the deer, with two round horns, near a foot long, and which, it is probable, it sheds as deer are found to do; its neck resembles that of a horse; its legs and feet those of the deer, but with this extraordinary difference, that the fore-legs are near twice as long as the hinder. As these creatures have been found eighteen feet high, and ten from the ground to the top of the shoulder, so allowing three feet for the depth of the body, seven feet remains, which is high enough to admit a man mounted on a middle-sized horse. The hinder part, however, is much lower, so that when the animal appears standing, and at rest, it has somewhat the appearance of a dog sitting; and this formation of its legs gives it an awkward and a laborious motion, which, though swift, must yet be tiresome. For this reason the camelopard is an animal very rarely found, and only finds refuge in the most internal desert regions of Africa. The dimensions of a young one, as they were accurately taken by a person who examined its skin, that was brought from the Cape of Good Hope, were found to be as follow: the length of the head was one foot eight inches; the height of the fore-leg, from the ground to the top of the shoulder, was ten feet; from the shoulder to the top of the head was seven; the height of the hind-leg was eight feet five inches; and from the top of the shoulder to the insertion of the tail was just seven feet long.

No animal, either from its disposition, or its formation, seems less fitted for a state of natural hostility; its horns

are blunt, and even knobbed at the ends; its teeth are made entirely for vegetable pasture; its skin is beautifully speckled with brown spots, upon a whitish ground; it is timorous and harmless, and, notwithstanding its great size, rather flies from, than resists, the slightest enemy; it partakes very much of the nature of the camel, which it so nearly resembles; it lives entirely upon vegetables, and when grazing, is obliged to spread its fore-legs very wide in order to reach its pasture;* its motion is a kind of pace, two legs on each side moving at the same time, whereas in other animals they move transversely. It often lies down with its belly to the earth, and, like the camel, has a callous substance upon its breast, which, when reposed, defends it from injury. This animal was known to the ancients, but has been very rarely seen in Europe. One of them was sent from the East to the Emperor of Germany, in the year 1559; but they have often been seen tame at Grand Cairo in Egypt; and, I am told, there are two there at present. When ancient Rome was in its splendour, Pompey exhibited at one time no less than ten upon the theatre. It was the barbarous pleasure of the people, at that time, to see the most terrible, and the most extraordinary animals, produced in combat against each other. The lion, the lynx, the tiger, the elephant, the hippopotamus, were all let loose promiscuously, and were seen to inflict indiscriminate destruction.

* Later naturalists say, that this is a mistake, and assert, that as the neck is long and elegant, and exceeds the legs by at least four inches, besides the length of the head, it is evident that it can graze without difficulty, and is not obliged to kneel down (as has been supposed), or spread asunder its legs, for that purpose.

END OF THE SECOND VOLUME.

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